ORDER NO. MD9412200C1
A2

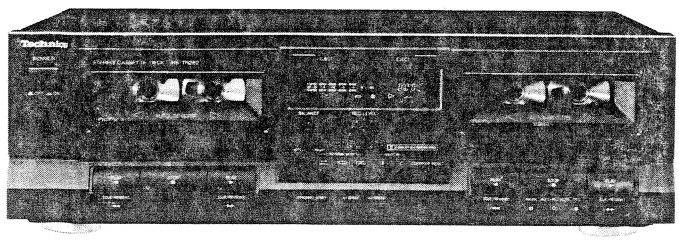
Service Manual

Cassette Deck

Stereo Cassette Deck

RS-TR262

DOLBY B·C NR HX PRO*



Colour

(K) ... Black Type

Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)

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RS-T330R MECHANISM SERIES (AR300)

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system Stereo cassette deck
Track system 4-track, 2-channel
Recording system AC bias
Bias frequency 80kHz
Erasing system AC erase
Heads
Deck 1 Playback head (Permalloy) × 1
Deck 2 Recording/Playback head (Permalloy) × 1
Erasing head (Double-gap ferrite) × 1
Motors
Deck 1 Capstan/Reel table drive (DC servo motor) × 1
Deck 2 Capstan/Reel table drive (DC servo motor) × 1
Tape speed 4.8cm/sec. ($1^{7}/_{8}$ ips)
Wow and flutter 0.14% (WRMS)
Fast forward and rewind times
Approx. 110 seconds with C-60 cassette tape
Frequency response (Dolby NR off)
NORMAL 40Hz~15kHz±3dB
20Hz~17kHz
CrO_2 40Hz~15kHz±3dB
20Hz~17kHz
METAL 40Hz~16kHz±3dB
20Hz~18kHz

S/N (Signal level = max recording level, CrO_2 type tape)
NR off 56dB (A weighted)
Dolby B NR on 66dB (A weighted)
Dolby C NR on 74dB (A weighted)
Input sensitivity and impedance
REC (IN) 60 mV/47kΩ
Output voltage and impedance
PLAY (OUT) 400 mV/800Ω

■ GENERAL

Power consumption 17W
Power supply AC 60 Hz, 120V
Dimensions (W × H × D) 430 × 136 × 290mm
($16^{15}/_{16}$" × $5^{3}/_{8}$" × $11^{13}/_{32}$")
Weight 4.7kg (10.4lb.)

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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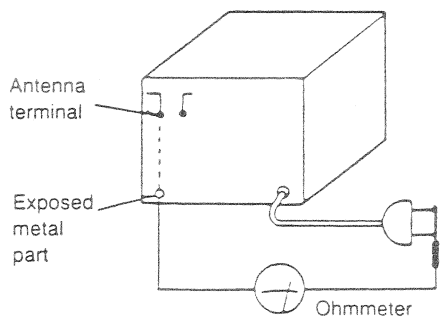
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barries, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

•INSULATION RESISTANCE TEST

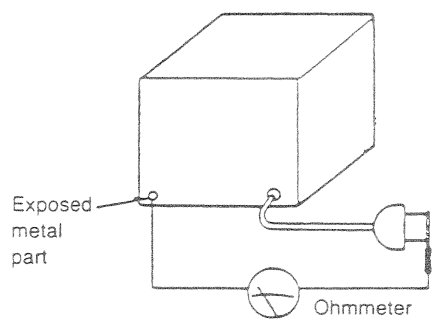
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3 MΩ and 5.2 MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance=3 MΩ–5.2 MΩ

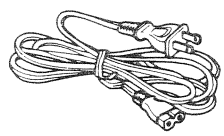


(Fig. B)

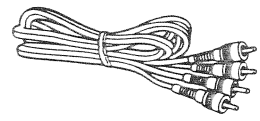
Resistance=Approx. ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ACCESSORIES



AC power supply cord
(SJA172) ..... 1 pc.



Stereo connection cable
(SJP2249-3)..... 2 pcs.

■ CONNECTIONS

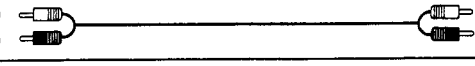
Before making connections, make sure that the power to this unit and all other system components is turned off first.

Note

Avoid letting the cables touch each other as much as possible, otherwise noise will be generated.

Stereo connection cable

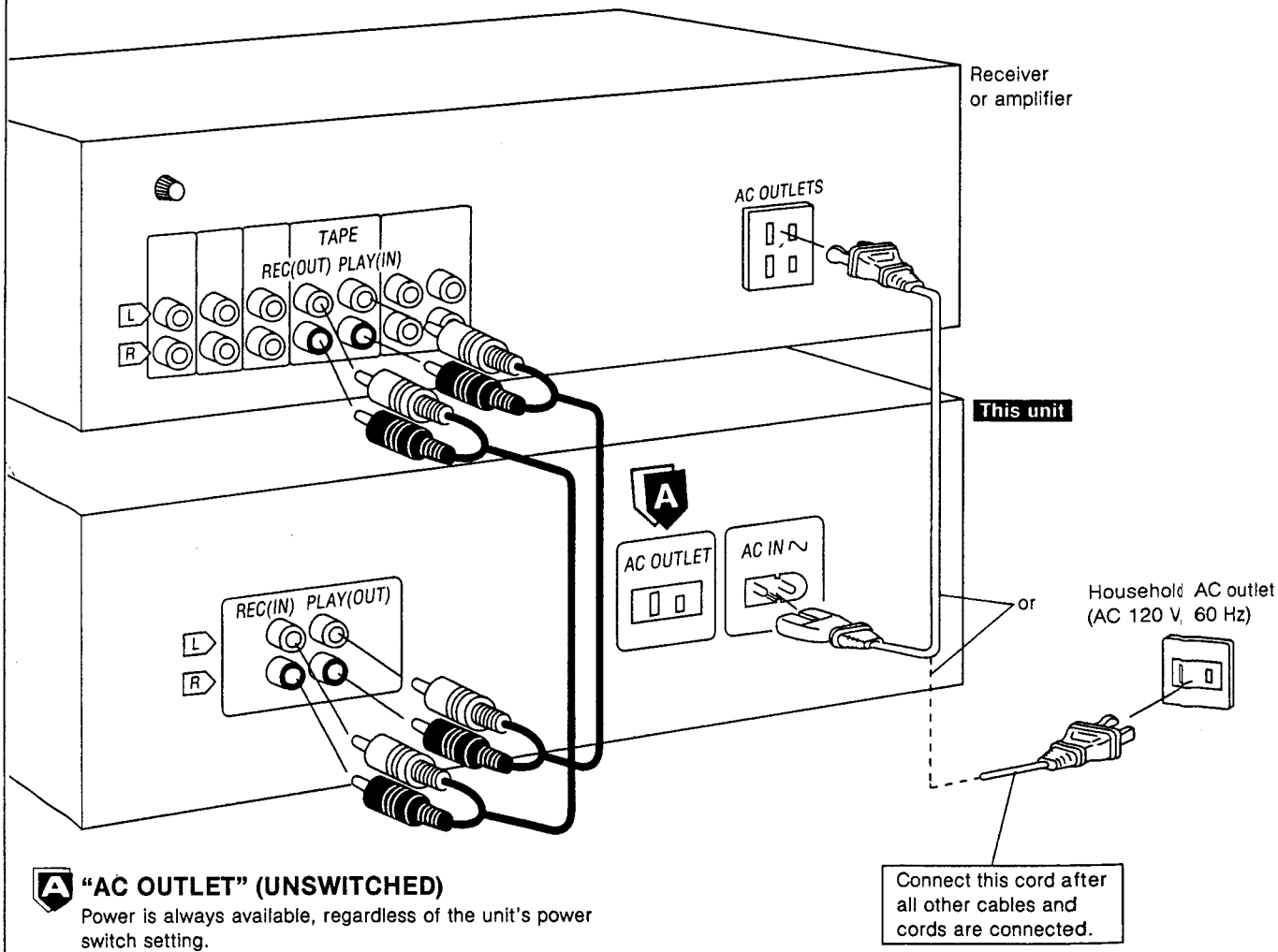
White (L)
Red (R)



Placements hints

If this unit is placed near a receiver or a tuner, a "hum" noise may be heard during tape playback, recording, or AM reception of the receiver or the tuner.

If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

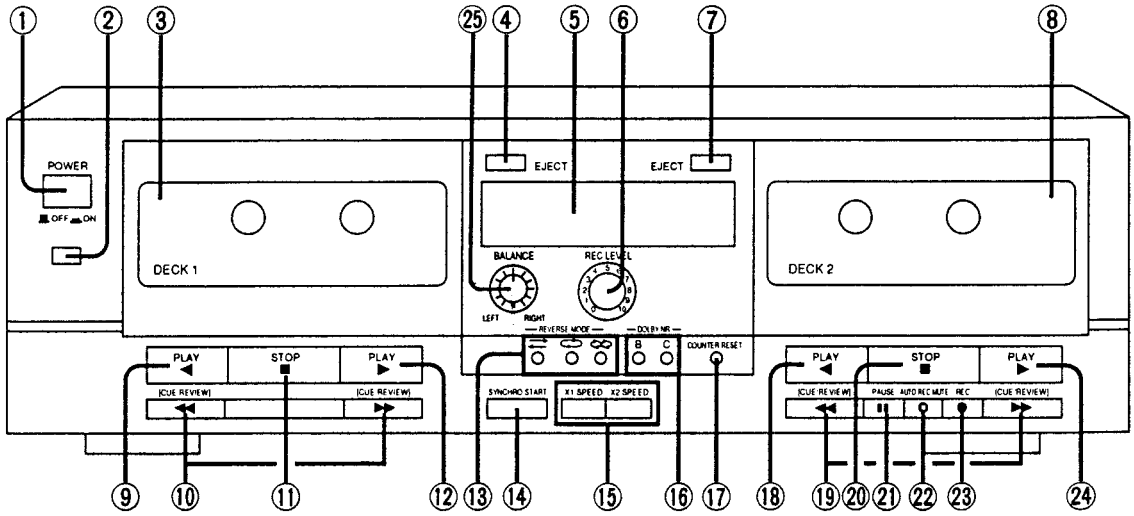


A "AC OUTLET" (UNSWITCHED)

Power is always available, regardless of the unit's power switch setting.

Audio equipment rated up to 100 W can be connected.

■ LOCATION OF CONTROLS

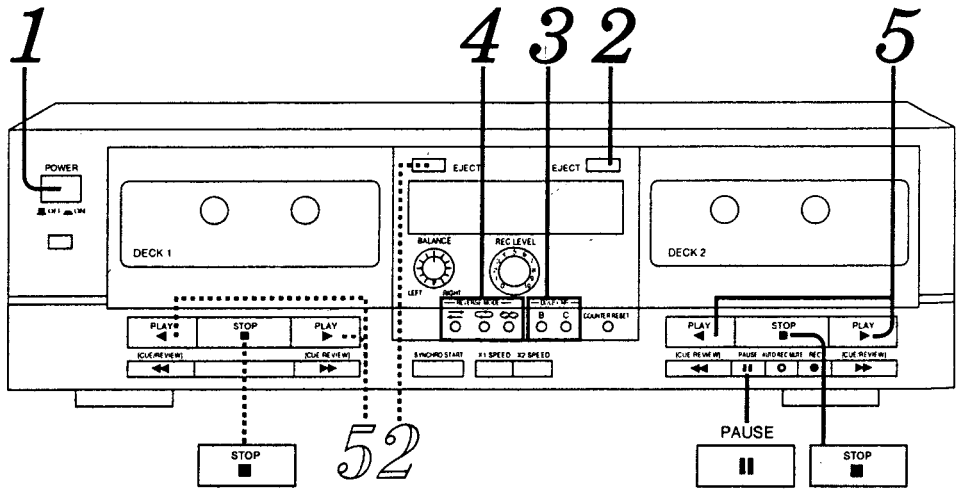


No.	Name
①	Power switch (POWER, ■ OFF ▬ ON)
②	Remote control signal receptor (Refer to "About the remote control function" on page 6.)
③	Cassette holder for deck 1
④	Eject button for deck 1 (EJECT)
⑤	Display
⑥	Recording-level control (REC LEVEL)
⑦	Eject button for deck 2 (EJECT)
⑧	Cassette holder for deck 2
⑨	Reverse-side playback button for deck 1 (◀ PLAY)
⑩	Fast-forward/cue, rewind/review buttons for deck 1 (◀◀/▶▶ [CUE/REVIEW])
⑪	Stop button for deck 1 (■ STOP)
⑫	Forward-side playback button for deck 1 (▶ PLAY)
⑬	Reverse-mode select buttons (REVERSE MODE)
⑭	Synchro-start button (SYNCHRO START)
⑮	Tape-to-tape recording-speed buttons (×1 SPEED, ×2 SPEED)

No.	Name
⑯	Dolby noise-reduction buttons (DOLBY NR)
⑰	Counter reset button (COUNTER RESET)
⑱	Reverse-side playback button for deck 2 (◀ PLAY)
⑲	Fast-forward/cue, rewind/review buttons for deck 2 (◀◀/▶▶ [CUE/REVIEW])
⑳	Stop button for deck 2 (■ STOP)
㉑	Pause button (❚❚ PAUSE)
㉒	Automatic-record-muting button (○ AUTO REC MUTE)
㉓	Record button (● REC)
㉔	Forward-side playback button for deck 2 (▶ PLAY)
㉕	Recording-balance control (BALANCE)

■ PLAY BACK

Either normal, CrO_2 or metal type cassettes can be used.



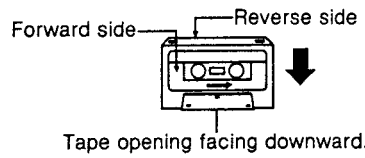
The procedures described below are an example of playback on Deck 2.

1 POWER

Press POWER.
(The unit will switch on.)

2 EJECT

Press EJECT, and then insert the cassette tape.

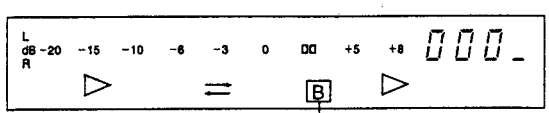


3 DOLBY NR B C

Press either DOLBY NR B or C to select the appropriate noise-reduction system.

B Press if the tape was recorded by the type-B Dolby NR system.
(The "B" Dolby noise-reduction indicator will then illuminate.)

C Press if the tape was recorded by the type-C Dolby NR system.
(The "C" Dolby noise-reduction indicator will then illuminate.)

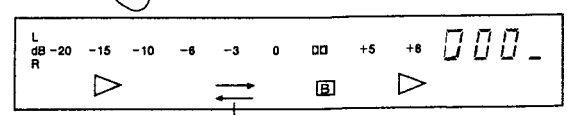


Dolby noise-reduction indicator (B or C)

If neither Dolby noise-reduction system was used, press the button corresponding to the Dolby noise-reduction indicator that is illuminated. (The indicator will then switch OFF.)

4 REVERSE MODE

Press ⇄, ⟲ or ∞ to select the desired reverse mode.



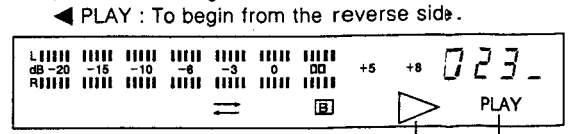
Reverse-mode indicator (⇄, ⟲ or ∞)

⇄ : One side only.
⟲ : Both sides repeatedly (up to 8 times).
∞ : Both sides, once only.
(Refer to page 6.)

5 PLAY PLAY

Press ◀ PLAY or ▶ PLAY.
(Playback will begin.)

▶ PLAY : To begin from the forward side.
◀ PLAY : To begin from the reverse side.



Illuminates

Indicates the side being played.

To play back on Deck 1, in steps 2 and 5 above, press the buttons (2 and 5) for Deck 1.

To temporarily stop playback

(Deck 2 only)

PAUSE

Press ❚❚ PAUSE.
The "PLAY" indicator will flash.

To resume playback, press the play button corresponding to the side of the tape being played.

To stop playback

STOP

Press ■ STOP.
The "PLAY" indicator will switch off.

Reverse function

The reverse function on this unit has three modes (⇄, ↻, ⇆). Read the descriptions below and select the mode as desired. (Refer to step 4 on page 5.)

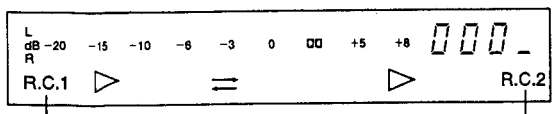
Mode	Tape travel
→ ←	Only one side of the tape (either the forward side or the reverse side) will be played, and operation will automatically stop when playback has been completed.
↻	Both sides of the tape will be played repeatedly eight times, and then operation will automatically stop. (If playback is begun from the reverse side, the forward side will be played seven times.)
⇆	**When there is a tape in only one of the decks** Both sides of the tape will be played once, and then operation will automatically stop. (If playback is begun from the reverse side, the forward side will not be played.) **When there is a tape in each of the decks** The forward and reverse sides of the tape in Deck 1 will be played, followed by the forward and reverse sides of the tape in Deck 2, and after this operation is repeated eight times, operation will automatically stop. (If playback is begun from Deck 2, the tape in Deck 1 will be played seven times.)

About the automatic-tape-select function

This unit is equipped with the automatic-tape-select feature; it automatically detects the type of tape being used, and then makes the suitable adjustments of the bias and equalization accordingly.

About the remote control function

This cassette deck can be operated by using the remote control provided with a Technics receiver. (For detailed information, refer to the operating instructions of the receiver.)
During operation from the remote control, the "R.C." indicator will light up.



Deck 1 "R.C." indication

Deck 2 "R.C." indication

About the Dolby noise-reduction system

The Dolby noise-reduction system is designed to effectively reduce the annoying high-frequency "hissing" noise typical of cassette tapes. During recording, the system functions to increase the high-frequency sound level, the sound, and then, during playback, that same portion is weakened to bring it back to the previous level.

This unit includes two types of Dolby noise-reduction systems, the Dolby B NR-type and C NR-type.

Dolby B-type noise-reduction

Noise is reduced to about one-third.
Use this system when playing back tapes recorded by the Dolby-B noise-reduction system, such as prerecorded music tapes, etc.

Dolby C-type noise-reduction

Noise is reduced to about one-tenth.
Use this system for the recording and playback of sound sources that have a wide dynamic range and good tone quality, such as FM broadcasts of live performances, etc., and for playing back such tapes.

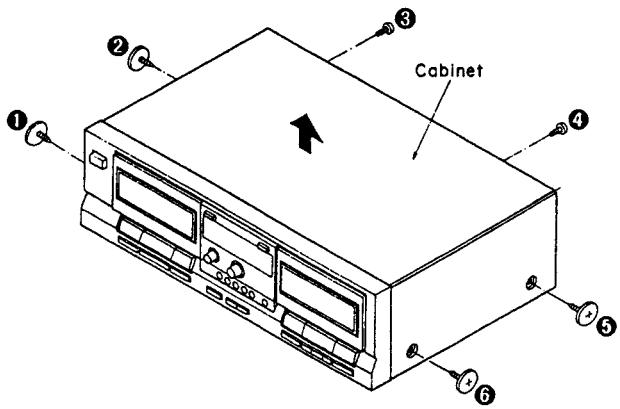
About the Dolby HX-Pro headroom extension system

By functioning to improve the maximum output level of the tape's high-frequency range, this system permits recordings without a reduction in the level of the sound source's high-frequency range. In addition, by using the system in parallel with this unit's noise-reduction system, recording and playback with a greatly extended dynamic range is possible.

■ DISASSEMBLY INSTRUCTIONS

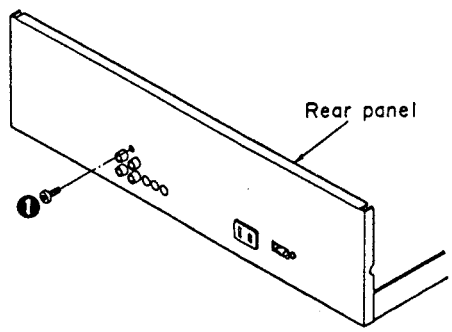
"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

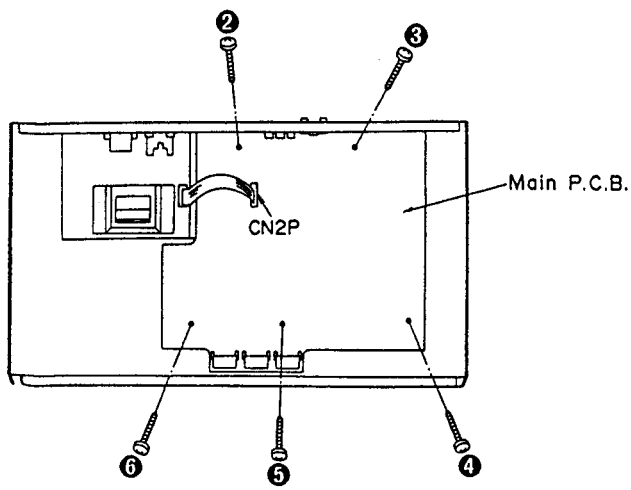
Ref. No. 1	Removal of the Cabinet
Procedure 1	



• Remove the 6 screws (❶~❻).

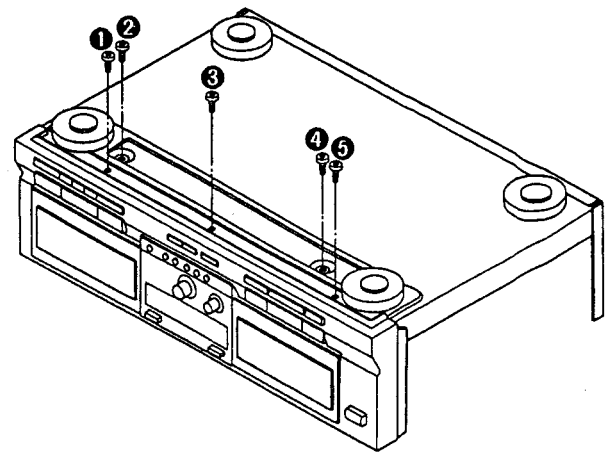
Ref. No. 3	Removal of the Main P.C.B.
Procedure 1→2→3	



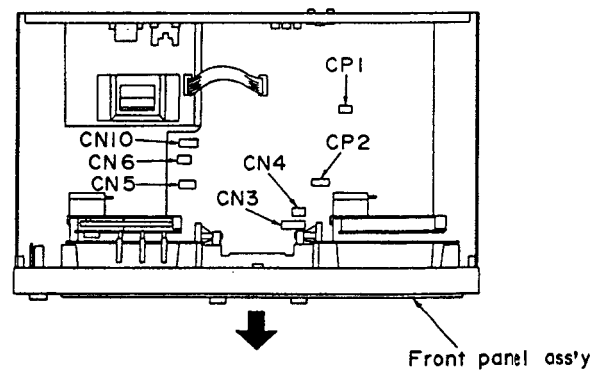


1. Remove the 6 screws (❶~❻)
2. Remove the 1 flat cable (CN2P).

Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1→2	



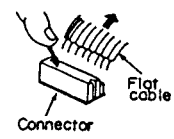
1. Remove the 5 screws (❶~❺).

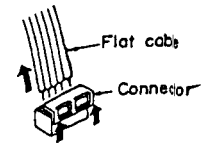


2. Remove the 2 connectors (CP1, CP2).
3. Remove the 5 flat cables (CN3, CN4, CN5, CN6, CN10).
4. Remove the front panel ass'y in the direction of arrow.

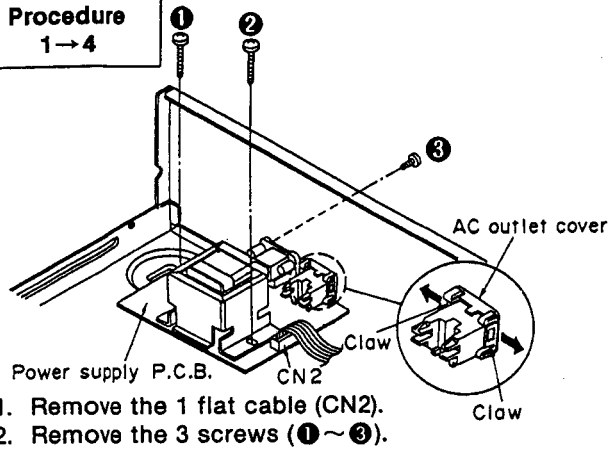
How to remove the Flat Cable

• Pull out the flat cable while pressing the connector. (CN3, CN5)	1. Lift the connector. 2. Pull out the flat cable. (CN4, CN6, CN10)



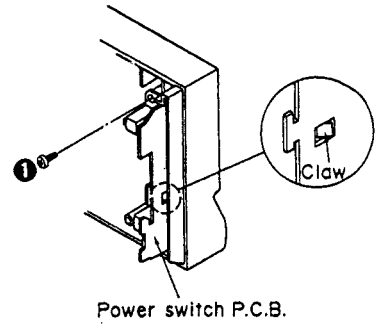


Ref. No. 4	Removal of the Power Supply P.C.B.
Procedure 1→4	



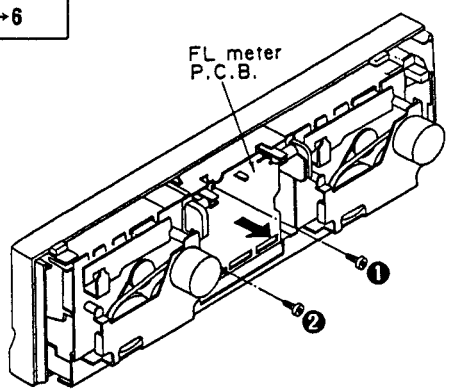
1. Remove the 1 flat cable (CN2).
2. Remove the 3 screws (❶~❸).
3. Release the 2 claws of the AC outlet cover.

Ref. No. 5	Removal of the Power Switch P.C.B.
Procedure 1→2→5	



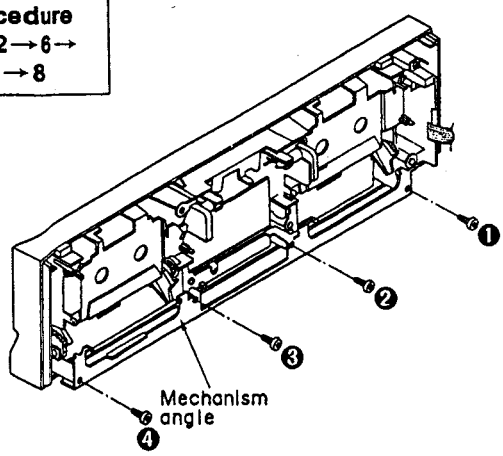
1. Remove the 1 screw(❶).
2. Release the 1 claw.

Ref. No. 6	Removal of the FL Meter P.C.B.
Procedure 1→2→6	



1. Remove the 2 screws ((❶, ❷).
2. Remove the FL meter P.C.B. in the direction of arrow.

Ref. No. 8	Removal of the Mechanism Angle
Procedure 1→2→6→ 7→8	



• Remove the 4 screws (❶~❹).

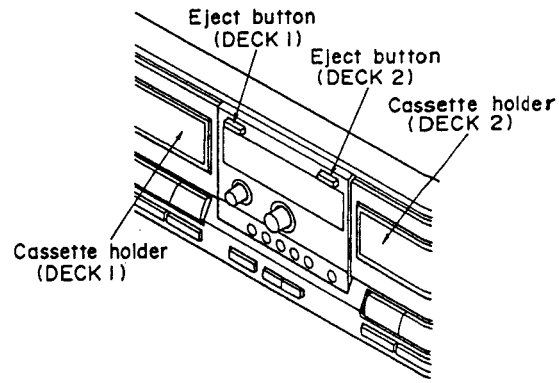
Ref. No. 7	Removal of the Mechanism Units (DECK 1, DECK 2)
Procedure 1→2→7	

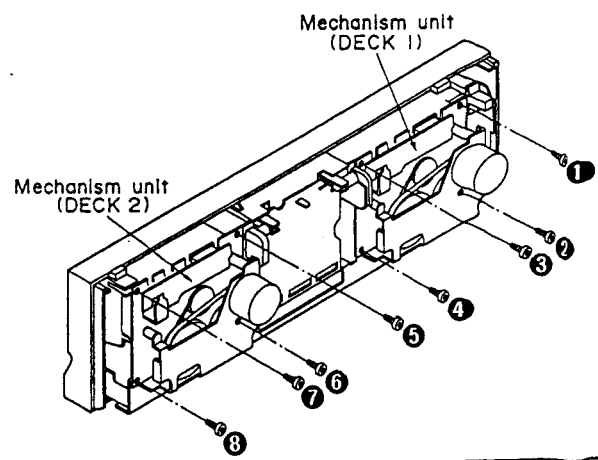
■ **Mechanism Unit (DECK 1)**

1. Press the eject button and open the cassette holder.
2. Remove the 4 screws (❶~❹).

■ **Mechanism Unit (DECK 2)**

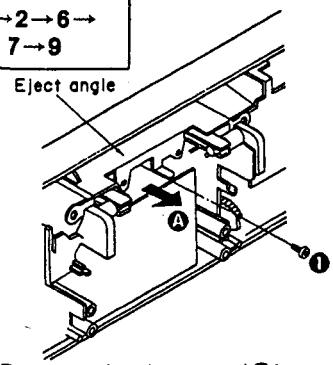
1. Press the eject button and open the cassette holder.
2. Remove the 4 screws (❺~❽).



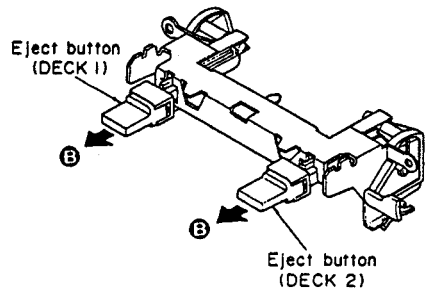


Ref. No. 9	Removal of the Eject Angle, Eject Buttons, and Eject Lever

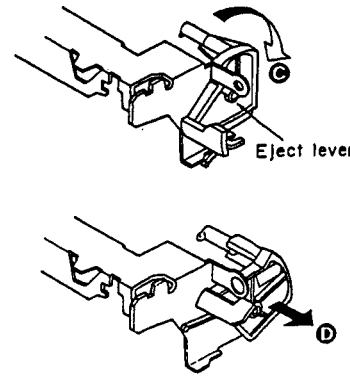
Procedure
1→2→6→7→9



1. Remove the 1 screw (❶).
2. Pull out the eject angle in the direction of arrow Ⓐ.



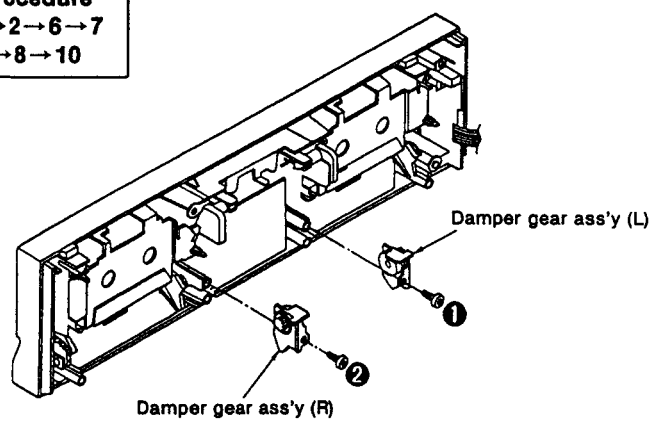
3. Pull out the eject buttons in the direction of arrow Ⓑ.



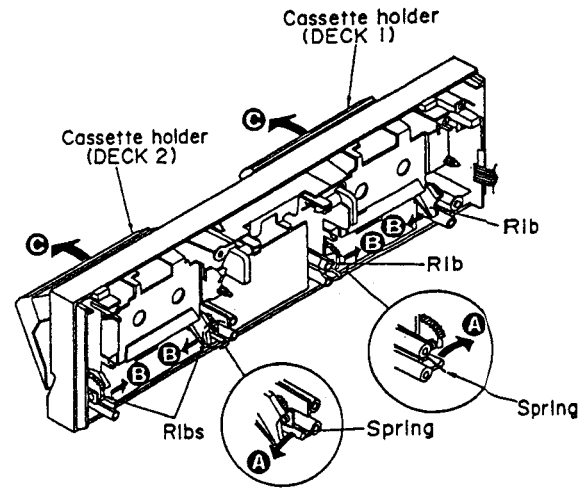
4. Turn the eject lever in the direction of arrow Ⓒ, and remove the eject lever in the hirection of arrow Ⓓ.

Ref. No. 10	Removal of the Cassette Holder (DECK 1, DECK 2)

Procedure
1→2→6→7→8→10



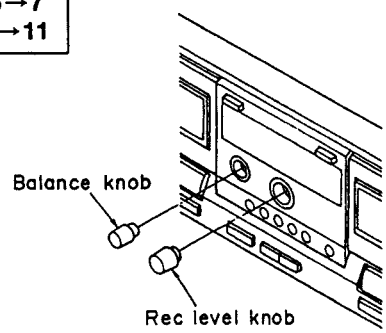
1. Remove the 2 screws (❶, ❷).
2. Remove the damper gear ass'y (L) and damper gear ass'y (R).



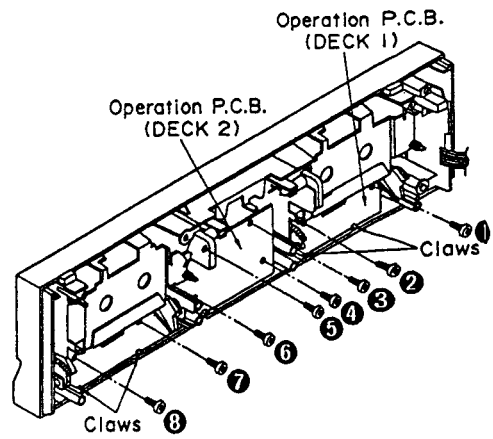
3. Remove the spring in the direction of arrow Ⓐ.
4. Remove the ribs in the direction of arrow Ⓑ.
5. Remove the cassette holder in the direction of arrow Ⓒ.

Ref. No. 11	Removal of the Operation (DECK 1) P.C.B. and Operation (DECK 2) P.C.B.

Procedure
1→2→6→7→8→10→11

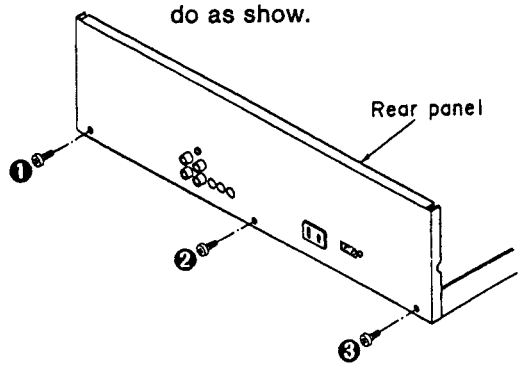


1. Remove the balance knob and rec level knob.

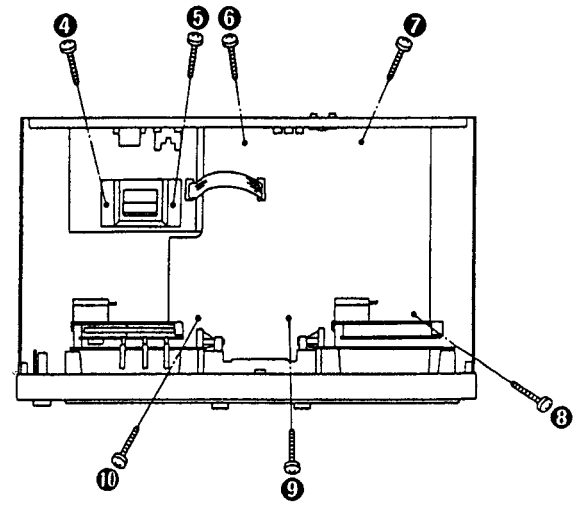


2. Remove the 8 screws (❶~❽).
3. Release the 4 claws.

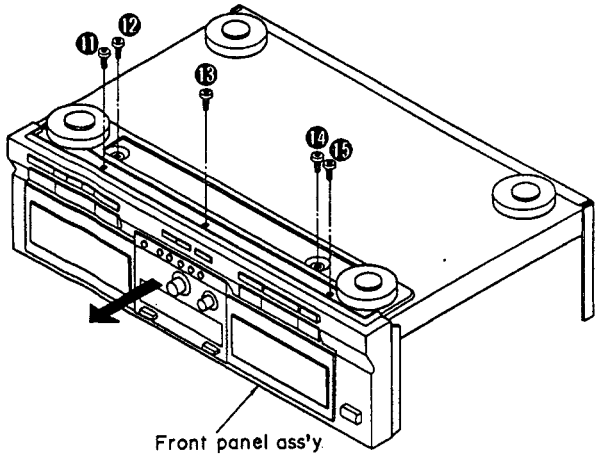
Ref. No. 12	How to check the Main P.C.B.
Procedure 1→12	• When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.



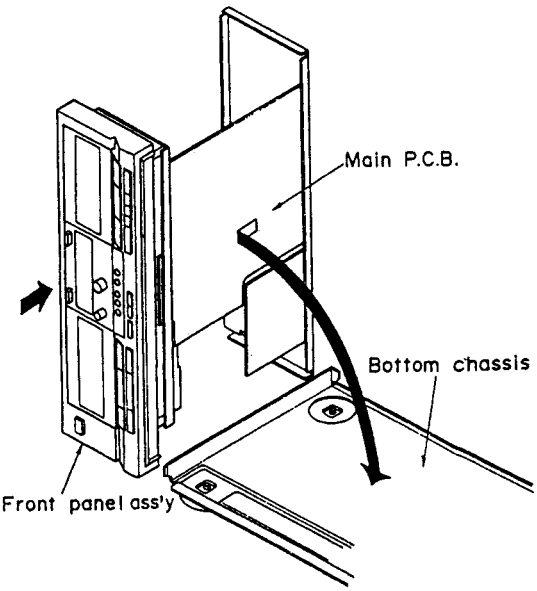
1. Remove the 3 screws (❶~❸).



2. Remove the 7 screws (❹~❿).



3. Remove the 5 screws (⓫~⓯).
4. Remove the front panel ass'y in the direction of arrow.



5. Remove the bottom chassis.
6. Reinstall the front panel to the main P.C.B.

■ MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Recording-level control; Maximum
- Recording-balance control; Center
- Reverse-mode selector switch; ⇄
- Tape-to-tape recording-speed selector; X1 SPEED
- Dolby NR switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C (68±9°F)

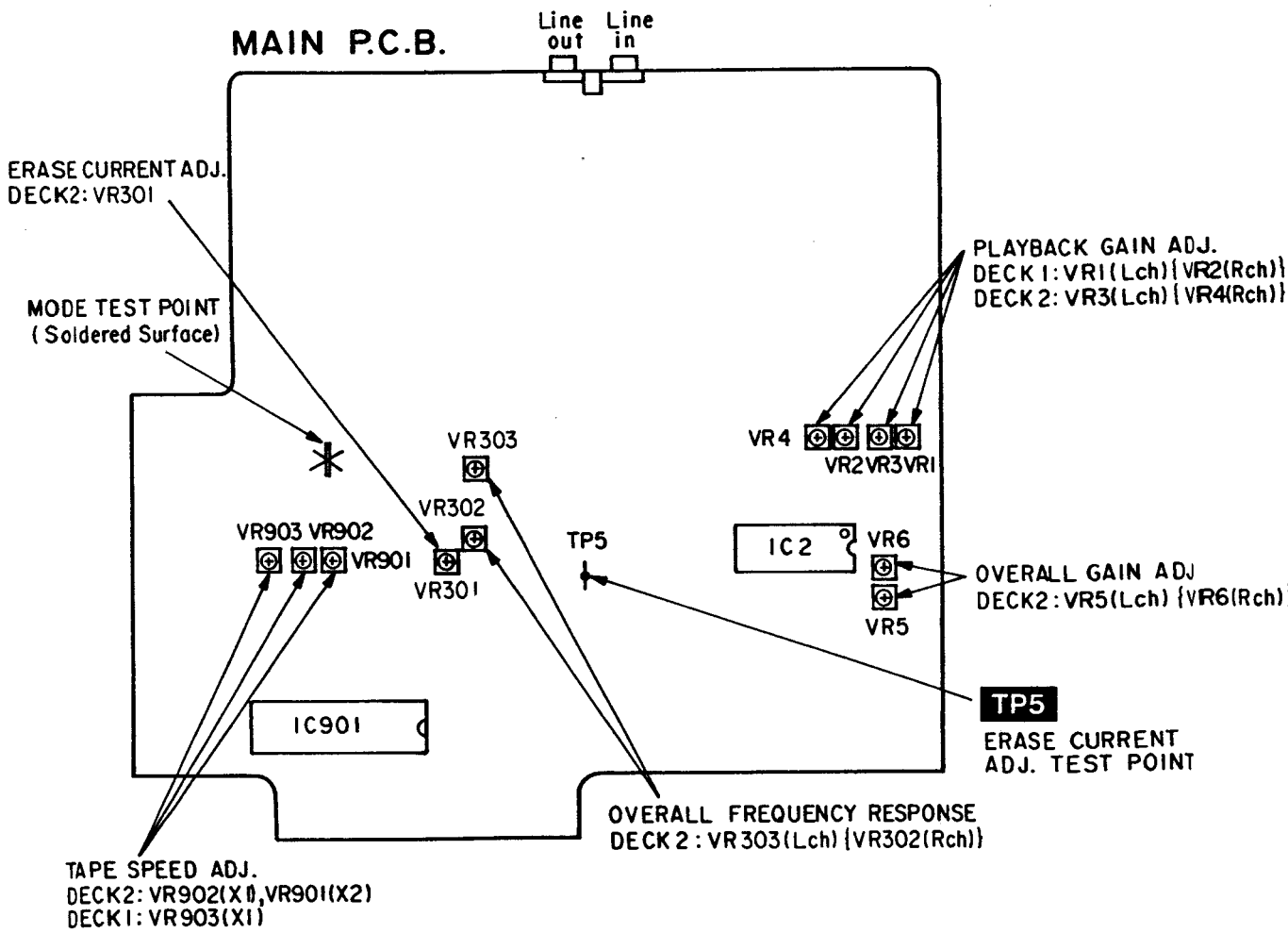
Measuring instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator
- ATT (Attenuator)
- Resistor (600Ω)

Test tape

- Head azimuth adjustment (8kHz, −20dB); QZZCFM
- Tape speed adjustment (3kHz, −10dB); QZZCWAT
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, −20dB); QZZCFM
- Overall frequency response, Overall gain adjustment, Erase current adjustment
  Normal reference blank tape; QZZCRV2
  CrO_2 reference blank tape; QZZCRX1
  Metal reference blank tape; QZZCRZ5

• Adjustment Points



HEAD AZIMUTH ADJUSTMENT (DECK 1/2)

Caution:

- Please replace both azimuth adjustment screws (RHE5152ZB) and springs (RMB0331) used for to new ones simultaneously when readjusting the head azimuth. (Shown in Fig. 2.)
  Even if you wish to readjust the head azimuth without replacing the screws and springs, a fine adjustment can not be done because of the screw-locking bond adhered to the azimuth screw and spring.
- Please remove the screw-locking bond left on the head base when replacing the azimuth screw.
- If you wish to readjust the head azimuth, be sure to adjust with adhering the cassette tape closely to the mechanism by pushing the center of cassette tape with your finger. (Shown in Fig. 3.)

1. Playback the azimuth adjustment portion (8kHz, −20dB) of the test tape (QZZCFM) in the forward play mode. Vary the azimuth adjusting screw until the output of the R-CH are maximized.
2. Perform the same adjustment in the reverse play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

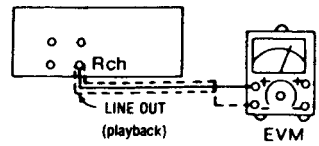


Fig. 1

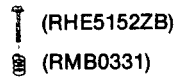


Fig. 2

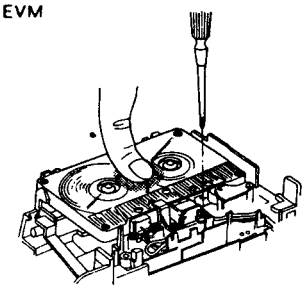


Fig. 3

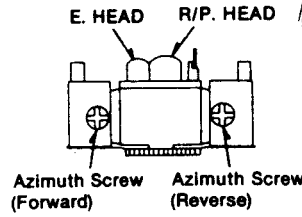


Fig. 4

TAPE SPEED ADJUSTMENT (DECK 1/2)

Normal speed (Standard value: 3000±45Hz)

1. Playback the middle portion of the test tape (QZZCWAT).
2. Adjust Deck 1=**VR903** and Deck 2=**VR902** for the output value shown below.

Adjustment target: 3000±15Hz (NORMAL speed)
Stanard value: 3000±45Hz (NORMAL speed)

High speed [Set the unit to forward (FWD) mode.]

3. Short-circuit the TEST jumper ("DECK 1" or "DECK 2" indicator blinks).
4. Playback the middle portion on the test tape (QZZCWAT).
5. Press the one touch tape edit (High) button.
   This will set the high speed mode.
6. At that time, check if the output from DECK 1 is within the standard value.

Standard value: 6000±600Hz (HIGH speed)

7. Adjust **VR901** so that the output frequency of DECK 2 is within **±30Hz** for the value of the output frequency of DECK 1.

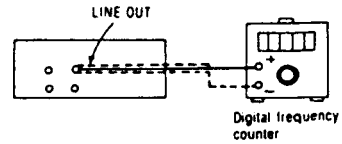


Fig. 5

PLAYBACK GAIN ADJUSTMENT (DECK 1/2)

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck 1=**VR1** (L-CH) [[**VR2** (R-CH)]] and Deck 2=**VR3** (L-CH) [[**VR4** (R-CH)]] so that the output is within the standard value.

Standard value: 0.4V±0.5dB

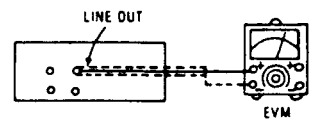


Fig. 6

PLAYBACK FREQUENCY RESPONSE (DECK 1/2)

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, −20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in **Fig. 8** for both L-CH and R-CH.

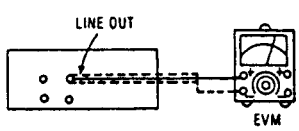


Fig. 7

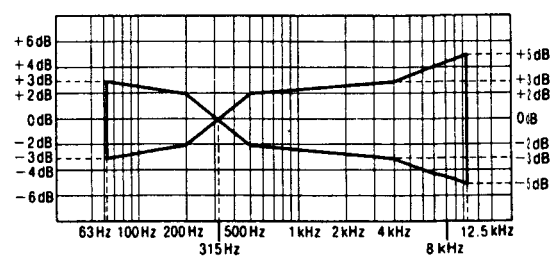


Fig. 8

ERASE CURRENT ADJUSTMENT (DECK 2)

1. Insert the Metal blank test tape (QZZCRZ5) and set the unit to the Record Pause mode.
2. Adjust **VR301** so that the output between **TP5** and GND is within the standard value.

Standard value: 190±5mA (Metal)...EVM Reading: 190±5mV

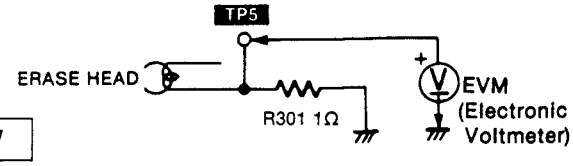


Fig. 9

OVERALL FREQUENCY RESPONSE (DECK 2)

1. Insert the Normal blank test tape (QZZCRV2) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1kHz, −24dB) through an attenuator.
3. Attenuate the signal by 20dB and adjust the frequency from 50Hz~10kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in **Fig. 10** in comparison to the reference frequency (1kHz).
6. If it is not within the standard range, adjust **VR303** (L-CH) and **VR302** (R-CH) so that the frequency level is within the standard range.
   - Level up in high frequency range..... Increase the bias current.
   - Level down in high frequency range..... Decrease the bias current.
7. Repeat steps 2~6 above using the CrO_2 tape (QZZCRX1) and the Metal tape (QZZCRZ5) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
8. Assure that the level is within the range shown in **Fig. 11.**

Normal Overall frequency response chart (NR OUT)

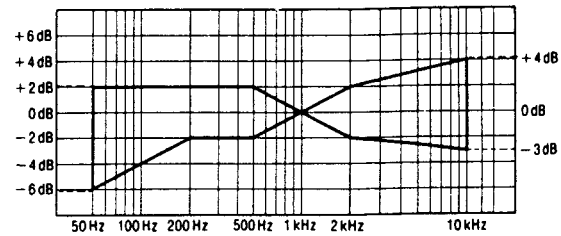


Fig. 10

CrO_2 Metal Overall frequency response chart (NR OUT)

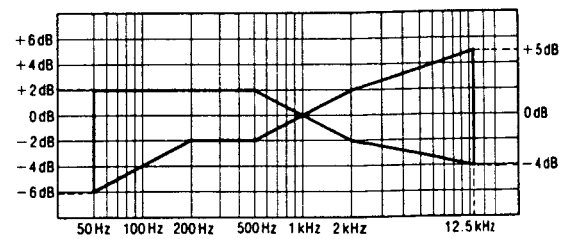


Fig. 11

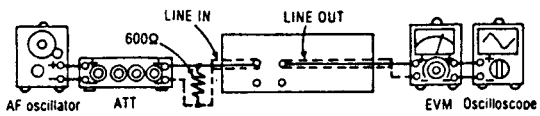


Fig. 12

OVERALL GAIN ADJUSTMENT (DECK 2)

1. Insert the Normal blank test tape (QZZCRV2) and set the unit to the Record pause mode.
2. Apply a reference input signal (1kHz, −24dB). Attenuate the output so that its level becomes 0.4V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust **VR5** (L-CH) and **VR6** (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: 0.4V±0.5dB

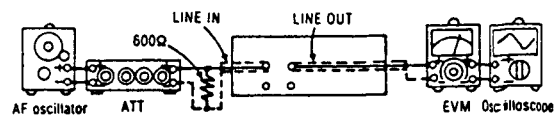


Fig. 13

■ TERMINAL FUNCTION OF IC

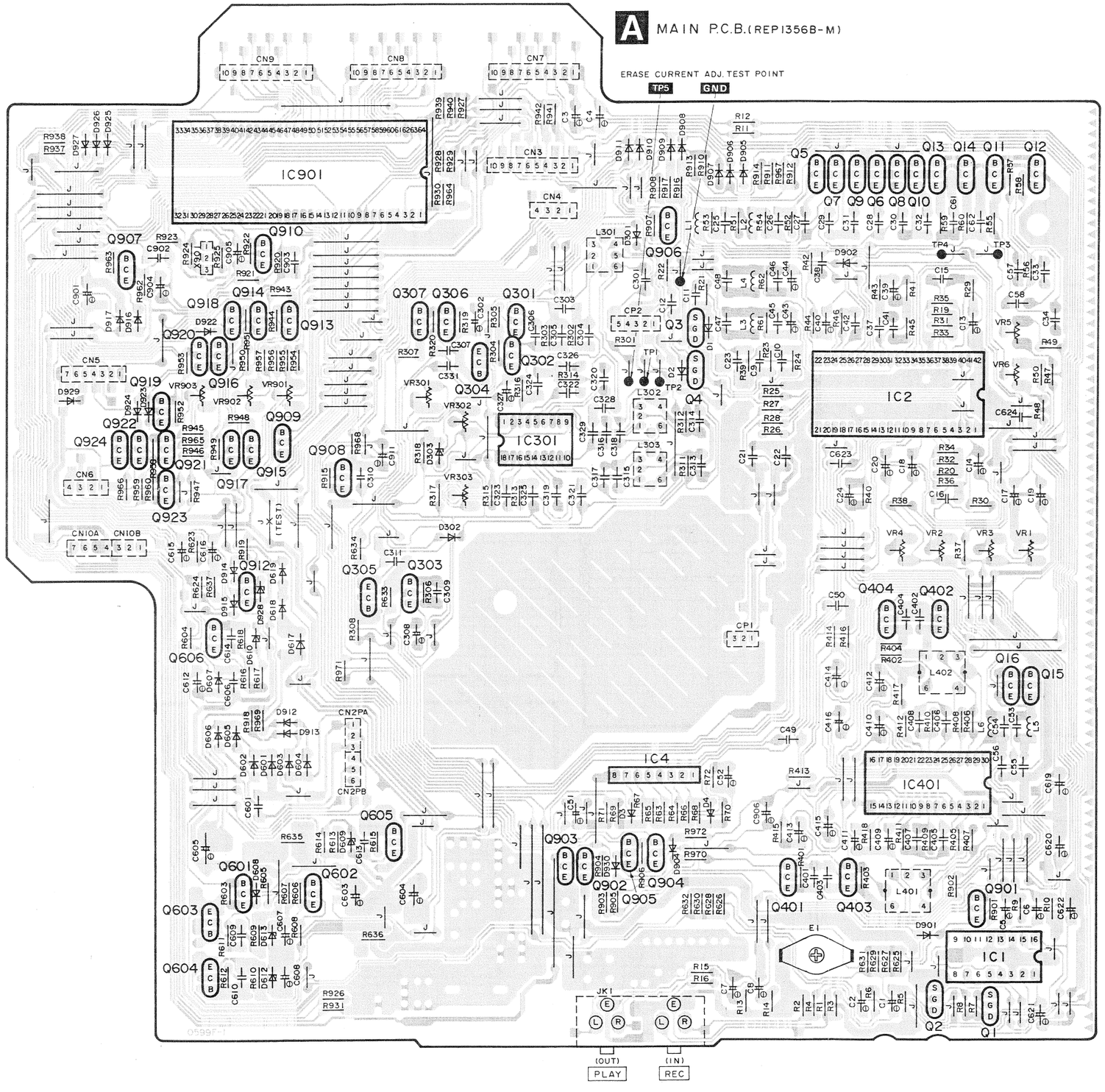
•IC901 (M50942-502SP): MICROCOMPUTER

Pin No.	Mark	I/O	Description
1	V_{REF}	I	Standard voltage terminal (5 V)
2	$\overline{1\,WAY}$ REV	I	Model select input terminal D1 1 Way..."L", D1 Reverse..."H"
3	INH	I	Deck 2 Forward/Reverse Rec. Inh. switch select terminal
4	QUI2	I	Connected to GND
5	QUI1		
6	R IN	I	Line signal level input terminal
7	L IN		
8	KEY 2	I	Key switch scan (DECK 1 STOP, CUE/REV., F. PLAY, REVERSE MODE, C-RES 2)
9	KEY 1	I	Key switch scan (DECK 2: STOP, CUE/REV., F. PLAY, R. PLAY, REC., PAUSE S. START, ×1, ×2, DOLBY B, C NR)
10	$\overline{B}$	O	Dolby NR amp. select terminal DOLBY "B"..."L", etc..."H"
11	$\overline{C}$	O	DOLBY NR amp. select terminal DOLBY "C"..."L", etc...."H"
12	ENC	O	Encode/Decode select terminal •"H" level in encode mode. •"L" level in decode mode.
13	$\overline{\times 2}$	O	×2 Speed select terminal •"×2"..."L", etc...."H"
14	$\overline{TP2}$	O	Deck 2 play select terminal •"L" level with PLAY/CUE/REVIEW mode. •"H" level with any other mode.
15	CRM	O	CUE/REV. mute terminal •"L" level in muting is off mode. •"H" level in muting is on mode.
16	RMT	O	Rec. amp. mute signal of deck 2 •"L" level in mute is off mode. •"H" level in mute is on mode.
17	DMT	O	Line out mute terminal •"L" level in muting is off mode. •"OPEN" when muting is on mode.
18	REC	O	Rec. mode output terminal •"L" level in REC. mode. •"H" level in any other mode.
19	$\overline{REN}$	O	Rec. Enable output terminal •"L" level in REC. mode •"H" level in any other mode
20	SYNC	I	Synchro start signal input terminal •"L"...Synchro start
21	REEL 2	I	Rotation pulse signal of reel table
22	REEL 1		
23	ARM	I	Auto rec. mute terminal •"L"...key "on"
24	$\overline{POF}$	I	Primary AC power detection terminal •"L"...off

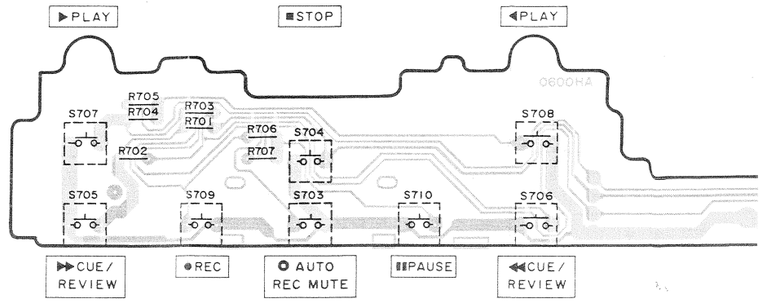
Pin No.	Mark	I/O	Description
25	R.C	I	Remote control serial data terminal
26	CN Vss	I	Connected to Vss.
27	$\overline{RESET}$	I	Reset input terminal •"L"...Reset "on"
28	X IN	I	Clock OSC terminal (4 MHz)
29	X OUT	O	
30	XC IN	I	Connected to Vss
31	XC OUT	O	———
32	Vss	I	Connected to GND
33	Φ	O	———
34	MODE 2	I	Deck 2 mechanism mode switch select terminal •"L"...PLAY, CUE/REV. mode
35	HALF 2	I	Deck 2 cassette half detection switch •"L" level in half detection switch in on mode. •"H" level in half detection switch in off mode.
36	MODE 1	I	Deck 1 mechanism mode switch select terminal •"L"...PLAY, CUE/REV. mode
37	HALF 1	I	Deck 1 cassette half detection switch •"L" level in half detection switch is on mode. •"H" level in half detection switch is off mode.
38	VP	I	Pull down power supply terminal (−Vcc)
39	SPD 2	O	Deck 2 motor speed select terminal •"L" level in "×2" mode •"H" level in "×1" mode
40	CAP 2	O	Deck 2 motor ON/OFF control terminal •"H" level in "ON"
41	SOL 2	O	Deck 2 solenoid ON/OFF control terminal •"H" level in "ON"
42	SPD 1	O	Deck 1 motor speed select terminal •"L" level in "×2" mode •"H" level in "×1" mode
43	CAP 1	O	Deck 1 motor ON/OFF control terminal •"H" level in "ON"
44	SOL 1	O	Deck 1 solenoid ON/OFF control terminal •"H" level in "ON"
45 ≀ 56	I ≀ a	O	Segment signal for FL display
57 ≀ 62	G6 ≀ G1	O	Grid signal for FL display
63	AVcc	I	Power supply terminal (A/D)
64	Vcc	I	Power supply terminal

PRINTED CIRCUIT BOARDS (This printed circuit boards may be modified at any time with the development of new technology)

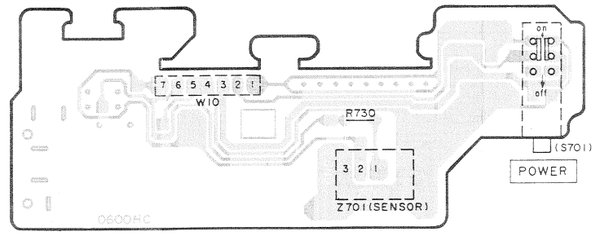
A MAIN P.C.B.(REPI356B-M)



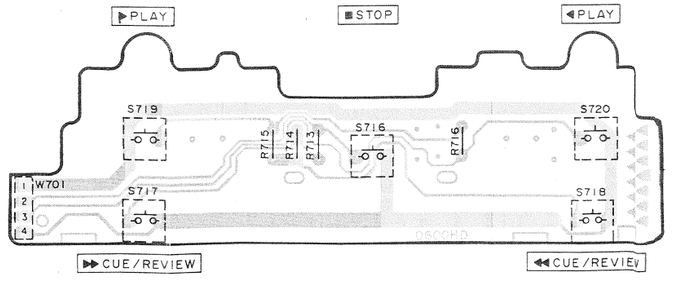
H OPERATION (DECK2) P.C.B. (REPI357C-S)



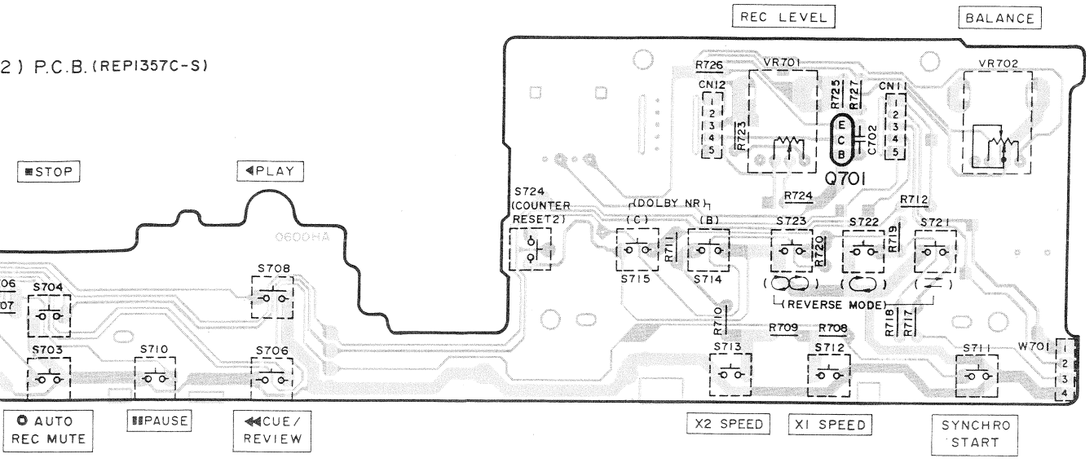
E POWER SWITCH P.C.B. (REPI357C-S)



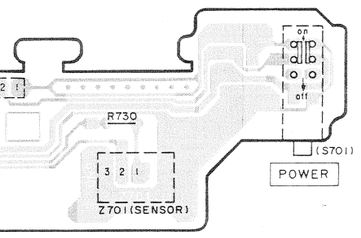
G OPERATION (DECK1) P.C.B. (REPI357C-S)



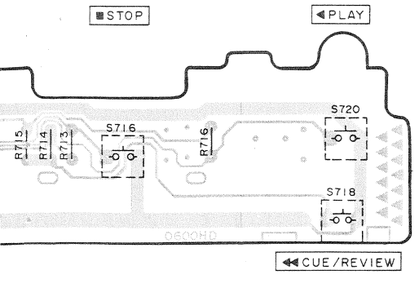
2) P.C.B. (REPI357C-S)



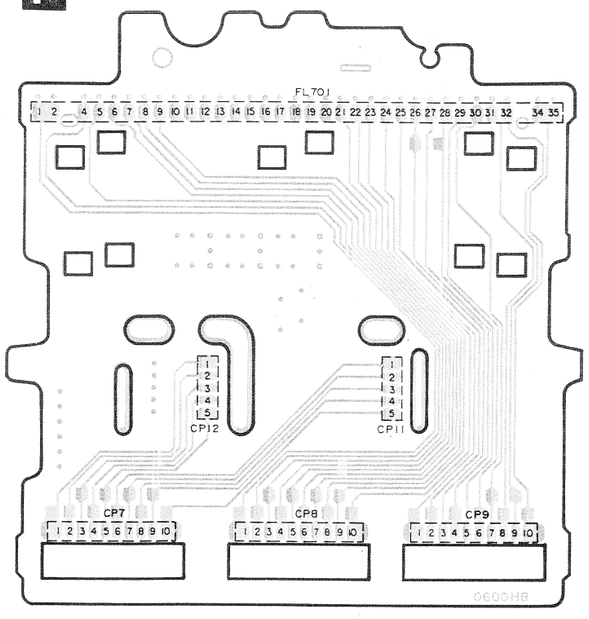
P.C.B. (REPI357C-S)



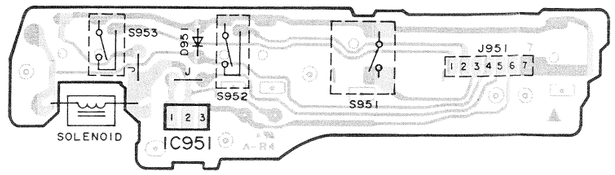
K1) P.C.B. (REPI357C-S)



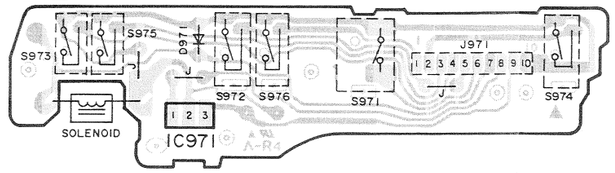
F FL METER P.C.B. (REPI357C-S)



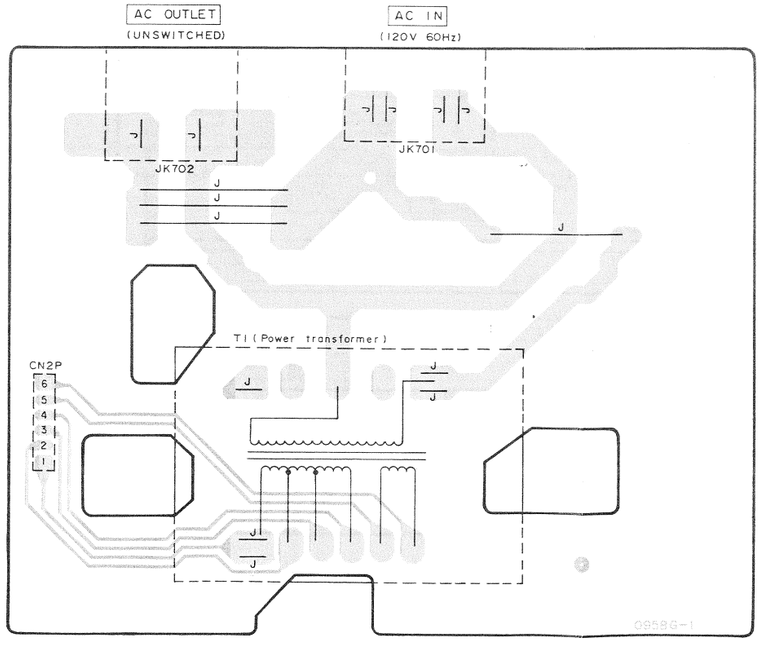
D MECHANISM (DECK1) P.C.B. (REP0107)



C MECHANISM (DECK2) P.C.B. (REP0075)

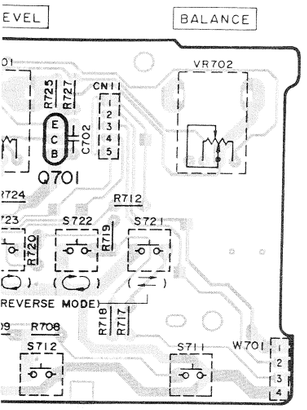


B POWER SUPPLY P.C.B. (REPI01IN-P)

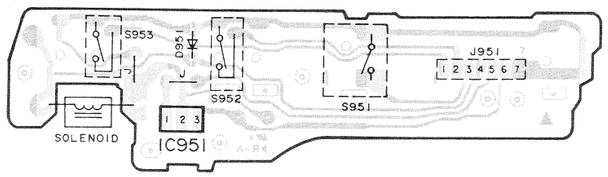


12 13 14 15 16 17

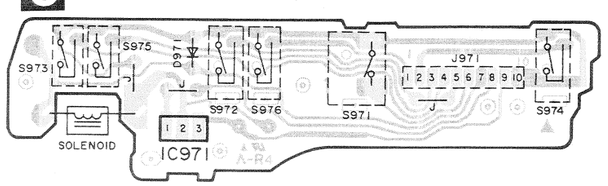
EVEL BALANCE



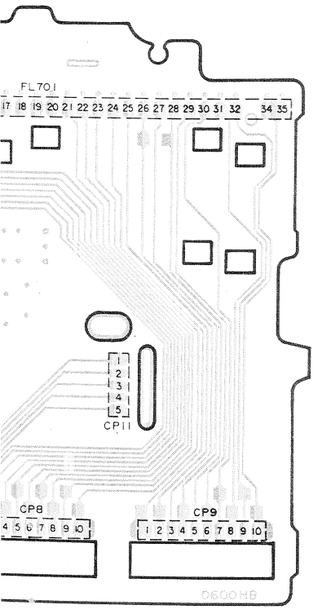
D MECHANISM (DECK I) P.C.B. (REP0107)



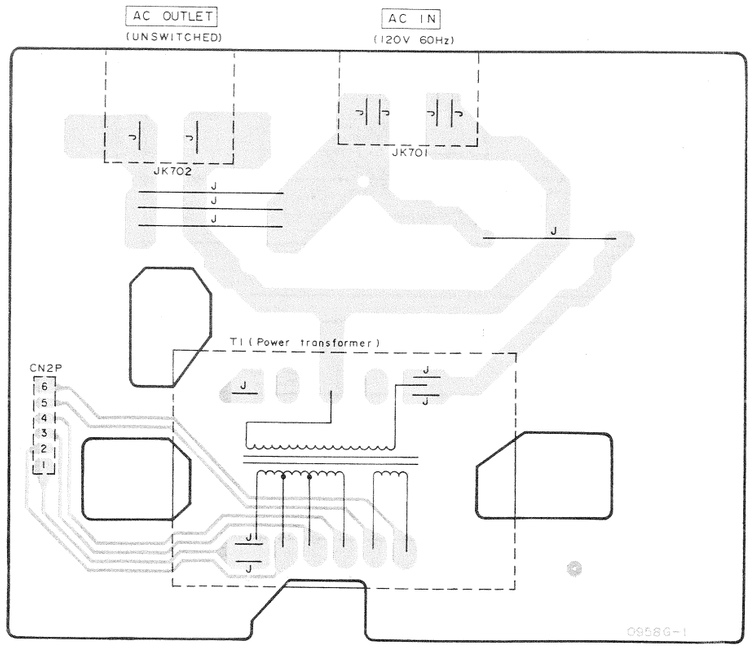
C MECHANISM (DECK2) P.C.B. (REP0075)



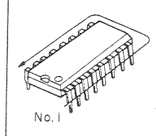
(EP1357C-S)



B POWER SUPPLY P.C.B. (REP1011N-P)

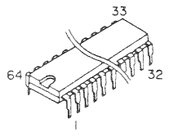


TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

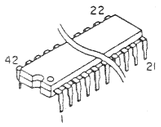


AN7384N-A	16 Pin
UPC1297CA	18 Pin
CXA1331S	30 Pin

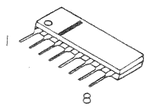
M50942-502SP



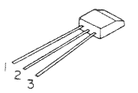
AN7351K

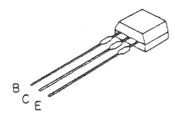


M5218AL



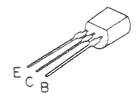
LB9051A-WD



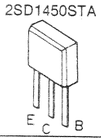


RVTDTA114YST
RVTDTA114EST
RVTDTC114EST

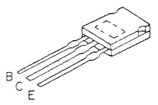
2SB621ARTA
KSD471ACYGTA



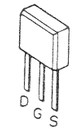
2SA1309ARTA
2SC3311ARTA
2SD1450STA

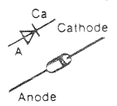


2SB1357ETA
2SD2037ETA



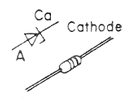
2SJ164PQRTA



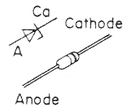


MA165TA
MA167TA
1SR35200TB
RVD1SS133TA

MTZJ5R1BTA
MTZJ6R2BTA
MTZJ8R2CTA



MTZJ20DTA



RS-TR262 RS-TR262

A MAIN CIRCUIT

B POWER SUPPLY CIRCUIT

Q901 2SC3311ARTA REC LEVEL CONT.

IC1 AN7384N-A ELECTRIC VOLUME

Q1,2 2SJ164PQRTA REC MUTE

Q3,4 2SJ164PQRTA HEAD SELECT (PLAY ON)

IC2 AN7351K PLAYBACK/REC AMP

IC1 AN7384N-A ELECTRIC VOLUME

Q304 KSD471ACYGTA BIAS OSC CONT.

IC301 UPC1297CA DOLBY HX PRO

Q302, Q301 2SC3311ARTA BIAS OSC

Q306, 307 RVTDTA114YST BIAS CONTROL

Q303 2SA1309ARTA BIAS OSC CONT.

Q912 RVTDTC114EST SWITCHING

Q605 KSD471ACYGTA REGULATOR

Q305 2SB1357ETA ERASE CURRENT CONT.

Q5~8 2SA1309ARTA REC EQ(X2/CrO2/METAL)

Q9~14 2SC3311ARTA REC EQ(X2/CrO2/METAL)

Q906 RVTDTA114EST SWITCHING(X2)

Q909 RVTDTC114EST SWITCHING (REC ON)

Q908 2SB621ARTA BIAS OSC CONT.

Q910 2SC3311A RESET

Q601 2SA1309ARTA STABILIZER

Q602 2SC3311ARTA STABILIZER

Q603 2SD2037ETA REGULATOR

Q604 2SB1357ETA REGULATOR

Q606 2SB621ARTA REGULATOR

Q913,919 2SB621ARTA SOLENOID DRIVE

Q914,920 RVTDTC114EST SOLENOID DRIVE

Q915,921 2SA1309ARTA MOTOR SPEED CONT.

Q916,918,922, RVTDTC11 MOTOR DRIVE MOTOR SPEED

9 10 11 12 13 14 15 16 17 18 19

Q5~8 2SA1309ARTA REC EQ(X2/CrO2/METAL)

Q9~14 2SC3311ARTA REC EQ(X2/CrO2/METAL)

Q15, 16 2SD1450STA MUTING

Q401~404 2SC3311ARTA MPX SELECT

IC401 CXA1331S DOLBY B/C NR

IC4 M5218AL SIGNAL LEVEL DET.

OVERALL GAIN ADJ. (L ch)

Q906 RVTDTA114EST SWITCHING(X2)

D916 ISR35200TB

Q910 2SC3311ARTA RESET

D917 ISR35200TB

IC901 M50942-502SP MICRO COMPUTER

Q907 2SA1309ARTA SWITCHING (REMOTE)

Q903 RVTDTC114EST R/P SELECT

Q902 RVTDTA114EST R/P SELECT

Q904, 905 RVTDTA114EST SWITCHING (DOLBY B/C)

D930 MA165TA

D929 MA165TA

D904 MA165TA

JK1 L ch R ch PLAY (OUT)

TEST TERMINAL

S701 (POWER)

Z701 RCDHC (REMOTE)

E POWER SWITCH CIRCU

F

Q914 Q915 Q916 Q917 Q918 Q919 Q920 Q921 Q922 Q923 Q924

TAPE SPEED ADJ. (X2, DECK2)

TAPE SPEED ADJ. (X1, DECK2)

TAPE SPEED ADJ. (X1, DECK1)

D925 D925 D926 D922 D924 D923 MA165TA

Q913, 919 2SB621ARTA SOLENOID DRIVE

Q914, 920 RVTDTC114EST SOLENOID DRIVE

Q915, 921 2SA1309ARTA MOTOR SPEED CONT.

Q916, 918, 922, 924 RVTDTC114EST MOTOR DRIVE/ MOTOR SPEED CONT.

Q917, 923 2SB621ARTA MOTOR SPEED CONT.

J971 S976 (AT$/METAL) S974 (F. REC INH.) S975 (AT$/CrO2) S973 (R. REC INH.) S972 (HALF) S971 (MODE) SOLENOID D971 RVD1S1335TA IC971 LB9051A-WD HALL IC

J951 S953 (AT$/CrO2) S952 (HALF) S951 (MODE) SOLENOID D931 RVD1S1335TA IC951 LB9051A-WD HALL IC

MOTOR (DECK2) MOTOR (DECK1)

C MECHANISM(DECK2) CIRCUIT

D MECHANISM(DECK1) CIRCUIT

G OPERATION(DECK1) CIRCUIT

H OPERATION(DECK2) CI

DECK 1 DECK

(REVERSE MODE)

12 13 14 15 16 17 18 19 20 21

Q401~404
2SC3311ARTA
MPX SELECT

IC401
CXA1331S
DOLBY B/C NR

IC4
M5218AL
SIGNAL LEVEL DET.

IC901
M50942-502SP
MICRO COMPUTER

Q907
2SA1309ARTA
(REMOTE)

Q903
RVTDTC114EST
R/P SELECT

Q902
RVTDTA114EST
R/P SELECT

Q904, 905
RVTDTA114EST
SWITCHING
(DOLBY B/C)

JK1
L ch
R ch
PLAY (OUT)

E POWER SWITCH CIRCUIT
Z701
RCDHC-237-E
(REMOTE SENSOR)
S701 (POWER)

F FL METER CIRCUIT
FL701 (RSL0086-F)
FL DISPLAY
TEST TERMINAL

Q701
2SC3311ARTA
REC LEVEL CONT.

DECK 2

C MECHANISM (DECK 2) CIRCUIT
IC971
LB9051A-WD
HALL IC

D MECHANISM (DECK 1) CIRCUIT
IC951
LB9051A-WD
HALL IC

G OPERATION (DECK 1) CIRCUIT
DECK 1

H OPERATION (DECK 2) CIRCUIT

■ SCHEMATIC DIAGRAM (Parts list on pages 29~32.)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

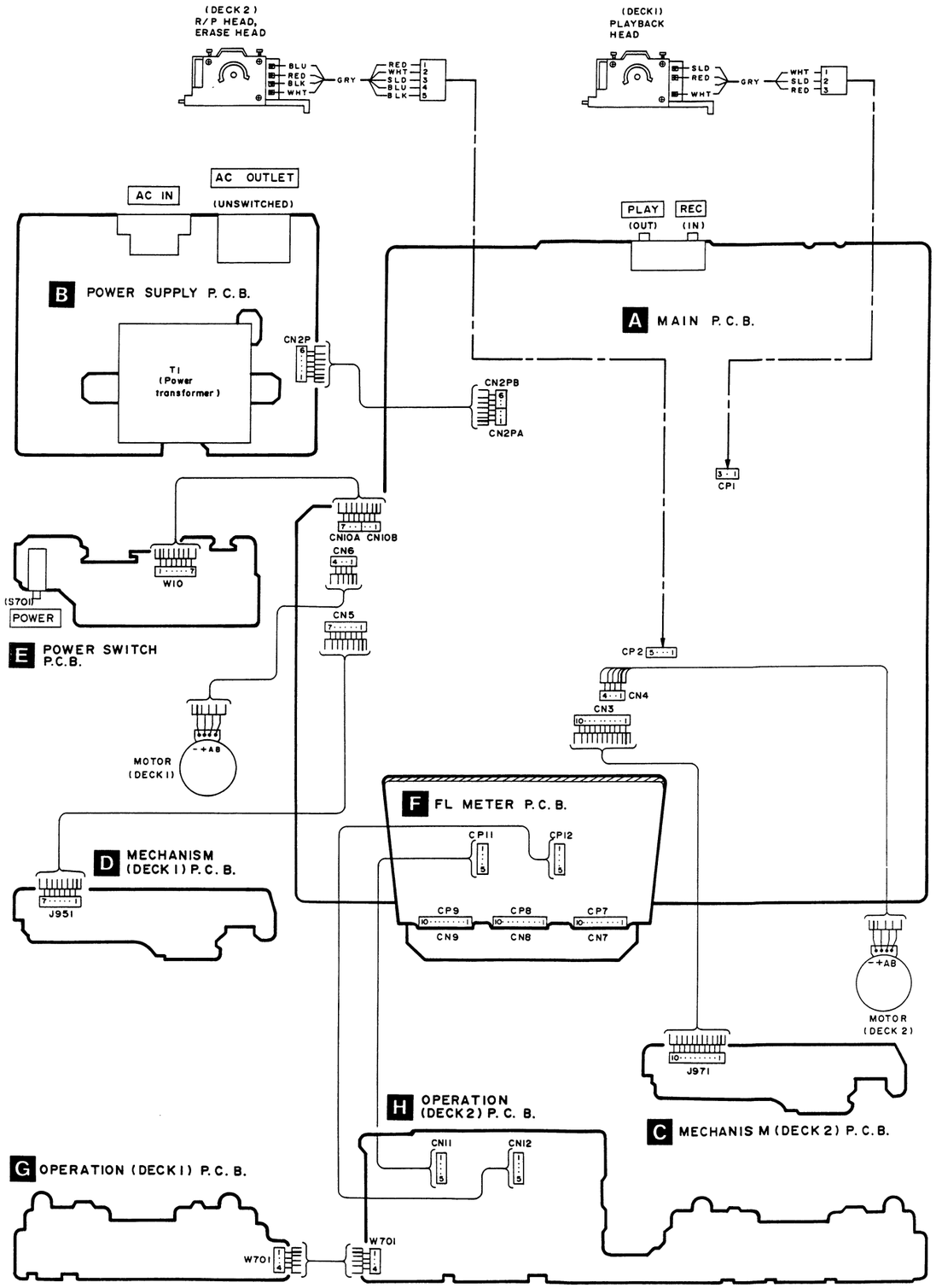
- S701 : Power switch in "**on**" position (POWER/▟ OFF ▙ ON).
- S703 : DECK 2 Automatic-record-muting switch (● AUTO REC MUTE).
- S704 : DECK 2 Stop switch (■ STOP).
- S705 : DECK 2 Fast-forward/cue switch (▶▶ CUE).
- S706 : DECK 2 Rewind/review switch (◀◀ REVIEW).
- S707 : DECK 2 Forward-side playback switch (▶ PLAY).
- S708 : DECK 2 Reverse-side playback switch (◀ PLAY).
- S709 : DECK 2 Record switch (● REC).
- S710 : DECK 2 Pause switch (▮▮ PAUSE).
- S711 : Synchro-start switch (SYNCHRO START).
- S712 : Edit-recording tape-speed selector switch (X1 SPEED).
- S713 : Edit-recording tape-speed selector switch (X2 SPEED).
- S714 : Dolby noise-reduction selector switch (Dolby NR; B).
- S715 : Dolby noise-reduction selector switch (Dolby NR; C).
- S716 : DECK 1 Stop switch (■ STOP).
- S717 : DECK 1 Fast-forward/cue switch (▶▶ CUE).
- S718 : DECK 1 Rewind/review switch (◀◀ REVIEW).
- S719 : DECK 1 Forward-side playback switch (▶ PLAY).
- S720 : DECK 1 Reverse-side playback switch (◀ PLAY).
- S721 : Reverse-mode switch (REVERSE MODE; ⇄).
- S722 : Reverse-mode switch (REVERSE MODE; ⟲).
- S723 : Reverse-mode switch (REVERSE MODE; ⟲⟳).
- S724 : DECK 2 Tape counter reset 2 switch (COUNTER RESET 2).
- S951 : DECK 1 Mode switch "**off**" position.
- S952 : DECK 1 Cassette half detection switch in "**off**" position.
- S953 : DECK 1 ATS (CrO_2) switch in "**off**" position.
- S971 : DECK 2 Mode switch in "**off**" position.
- S972 : DECK 2 Cassette half detection switch in "**off**" position.
- S973 : DECK 2 Reverse rec. inhibit switch in "**off**" position.
- S974 : DECK 2 Forward rec. inhibit switch in "**off**" position.
- S975 : DECK 2 ATS (CrO_2) switch in "**off**" position.
- S976 : DECK 2 ATS (Metal) switch in "**off**" position.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  1 K=1,000 (Ω), 1 M=1,000 k (Ω)
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
  ( )..... Voltage values at record mode.
  For measurement us EVM.
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.
- (▬▬▬ <+B> ▬▬▬) indicates +B (bias).
- (▬ ▬ ▬ <−B> ▬ ▬ ▬) indicates −B (bias).
- (⇢⇢⇢) indicates the flow of the playback signal.
- (⇨) indicates the flow of the record signal.
- The supply part number is described alone in the replacement parts list.

Ref. No.	Production Part No.	Supply Part No.
IC3, 4	M5218AL	M5218L
Z701	RCDHC-237-E	RCDHC-237

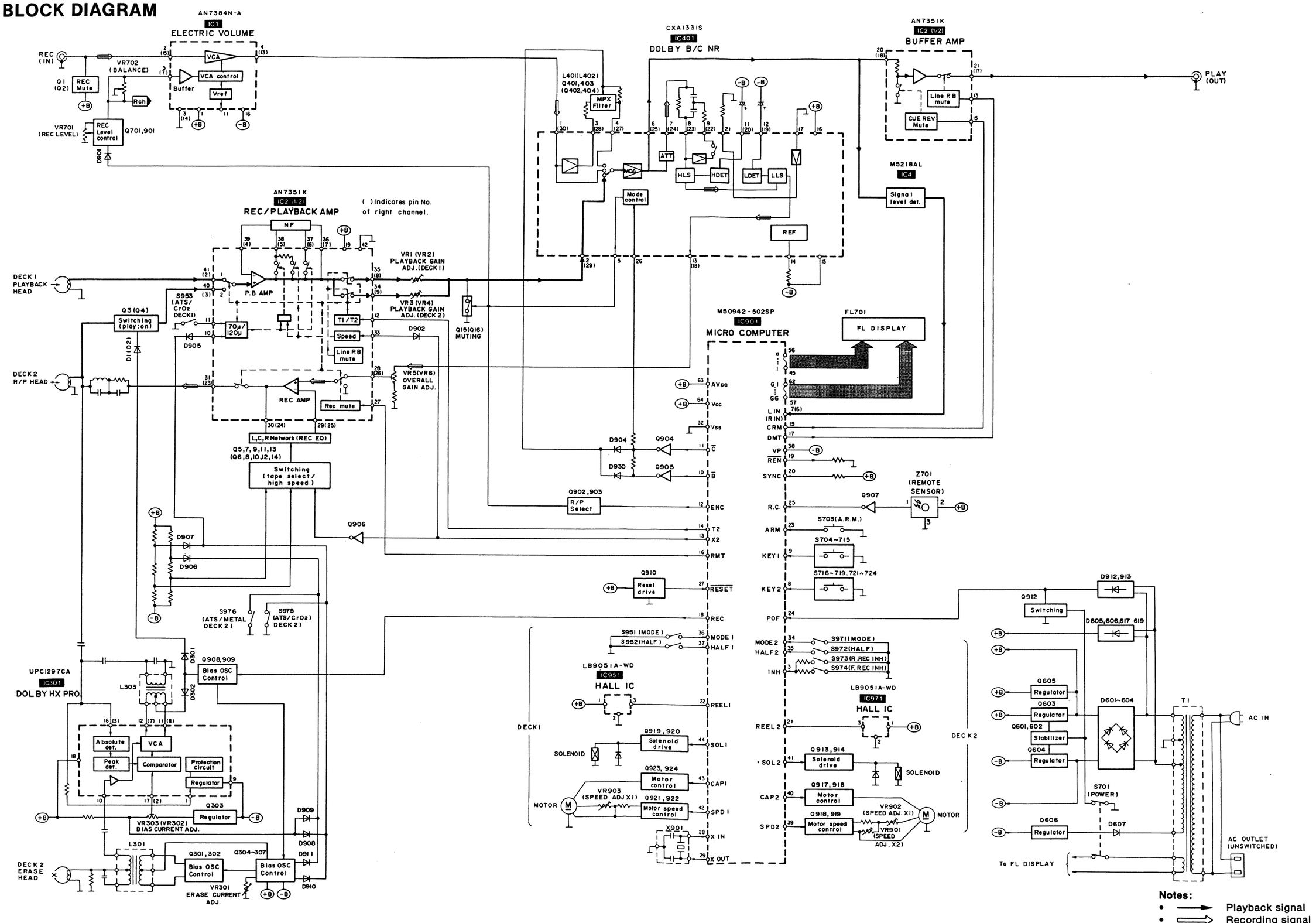
***Caution!**

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
*Cover the parts boxes made of plastics with aluminum foil.
*Ground the soldering iron.
*Put a conductive mat on the work table.
*Do not touch the legs of IC or LSI with the fingers directly.

■ WIRING CONNECTION DIAGRAM



■ BLOCK DIAGRAM



■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*[M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC1	AN7384N-A	ELECTRIC VOLUME	
IC2	AN7351K	PLAYBACK/REC AMP	
IC4	M5218L	SIGNAL LEVEL DET.	
IC301	UPC1297CA	DOLBY HX PRO	
IC401	CXA1331S	DOLBY B/C NR	
IC901	M50942-502SP	MICROCOMPUTER	
IC951	LB9051A-WD	HALL (DECK1)	
IC971	LB9051A-WD	HALL (DECK2)	
		TRANSISTOR(S)	
Q1-4	2SJ164PQRTA	TRANSISTOR	
Q5-8	2SA1309A-R	TRANSISTOR	
Q9-14	2SC3311AR	TRANSISTOR	
Q15, 16	2SD1450RTA	TRANSISTOR	
Q301, 302	2SC3311AR	TRANSISTOR	
Q303	2SA1309A-R	TRANSISTOR	
Q304	KSD471ACYGTA	TRANSISTOR	
Q305	2SB1357ETA	TRANSISTOR	[M]
Q306, 307	RVTDTA114YST	TRANSISTOR	
Q401-404	2SC3311AR	TRANSISTOR	
Q601	2SA1309A-R	TRANSISTOR	⚠
Q602	2SC3311AR	TRANSISTOR	⚠
Q603	2SD2037ETA	TRANSISTOR	[M]
Q604	2SB1357ETA	TRANSISTOR	[M]
Q605	KSD471ACYGTA	TRANSISTOR	
Q606	2SB621ARTA	TRANSISTOR	
Q701	2SC3311AR	TRANSISTOR	
Q901	2SC3311AR	TRANSISTOR	
Q902	RVTDTA114SET	TRANSISTOR	
Q903	RVTDTC114ES	TRANSISTOR	
Q904-906	RVTDTA114SET	TRANSISTOR	
Q907	2SA1309A-R	TRANSISTOR	
Q908	2SB621ARTA	TRANSISTOR	
Q909	RVTDTC114ES	TRANSISTOR	
Q910	2SC3311AR	TRANSISTOR	
Q912	RVTDTC114ES	TRANSISTOR	
Q913	2SB621ARTA	TRANSISTOR	⚠
Q914	RVTDTC114ES	TRANSISTOR	
Q915	2SA1309A-R	TRANSISTOR	
Q916	RVTDTC114ES	TRANSISTOR	
Q917	2SB621ARTA	TRANSISTOR	⚠
Q918	RVTDTC114ES	TRANSISTOR	
Q919	2SB621ARTA	TRANSISTOR	⚠
Q920	RVTDTC114ES	TRANSISTOR	
Q921	2SA1309A-R	TRANSISTOR	
Q922	RVTDTC114ES	TRANSISTOR	
Q923	2SB621ARTA	TRANSISTOR	⚠
Q924	RVTDTC114ES	TRANSISTOR	
		DIODE(S)	
D1, 2	MA167	DIODE	
D3, 4	MA165	DIODE	
D301, 302	MA165	DIODE	
D303	MTZJ8R2CTA	DIODE	
D601-607	1SR35200TB	DIODE	⚠
D608	MA165	DIODE	
D609	MTZJ6R2BTA	DIODE	
D610	MTZJ20DTA	DIODE	
D612, 613	MTZJ8R2CTA	DIODE	
D617-619	1SR35200TB	DIODE	⚠
D901, 902	MA165	DIODE	
D904-911	MA165	DIODE	
D912, 913	MA165	DIODE	⚠
D914, 915	MA165	DIODE	
D916, 917	1SR35200TB	DIODE	
D922-927	MA165	DIODE	
D928	MTZJ5R1BTA	DIODE	
D929, 930	MA165	DIODE	
D951	RVD1SS133TA	DIODE (DECK1)	
D971	RVD1SS133TA	DIODE (DECK2)	
		VARIABLE RESISTOR(S)	
VR1-4	EVNDXAA00B24	PLAYBACK GAIN ADJ.	
VR5, 6	EVNDXAA00B14	OVERALL GAIN ADJ.	
VR301	EVNDXAA00B53	ERASE CURRENT ADJ.	
VR302, 303	EVNDXAA00B14	OVERALL FREQ. ADJ.	
VR701	EVJ02FF02B15	REC LEVEL CONTROL	
VR702	EVJ02SF02G15	BALANCE	
VR901-903	EVNDXAA00B53	TAPE SPEED ADJ.	
		COIL(S)	
L1, 2	SLQX272-1YT	COIL	
L3, 4	SLQX303-1KT	COIL	
L5, 6	RLQB103JT-Y	COIL	
L301	SL09B4-K	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L302, 303	SL09B1-Z	COIL	
L401, 402	QLM9Z10K	COIL	
		TRANSFORMER(S)	
T1	RTP1K4C008-V	POWER TRANSFORMER	⚠
		REMOTE SENSOR(S)	
Z701	RCDHC-237	REMOTE SENSOR	
		OSCILLATOR(S)	
X901	EFOGC4004A4	CERAMIC FILTER(4MHz)	
		DISPLAY TUBE(S)	
FL701	RSL0086-F	DISPLAY TUBE	⚠
		SWITCH(ES)	
S701	RSP2B012-J	POWER	[M]⚠
S703	EVQ21405R	AUTO REC MUTE(DECK2)	
S704	EVQ21405R	STOP(DECK2)	
S705	EVQ21405R	F. F. (DECK2)	
S706	EVQ21405R	REW. (DECK2)	
S707	EVQ21405R	F. PLAYBACK(DECK2)	
S708	EVQ21405R	R. PLAYBACK(DECK2)	
S709	EVQ21405R	REC(DECK2)	
S710	EVQ21405R	PAUSE(DECK2)	
S711	EVQ21405R	SYNCHRO START	
S712	EVQ21405R	EDITING TAPE SPEED(X1)	
S713	EVQ21405R	EDITING TAPE SPEED(X2)	
S714	EVQ21405R	DOLBY NR B	
S715	EVQ21405R	DOLBY NR C	
S716	EVQ21405R	STOP(DECK1)	
S717	EVQ21405R	F. F. (DECK1)	
S718	EVQ21405R	REW. (DECK1)	
S719	EVQ21405R	F. PLAYBACK(DECK1)	
S720	EVQ21405R	R. PLAYBACK(DECK1)	
S721-723	EVQ21405R	REVERSE MODE	
S724	EVQ21405R	COUNTER RESET2(DECK2)	
S951	RSH1A89ZB-U	MODE(DECK1)	
S952	RSH1A90YB-U	HALF(DECK1)	
S953	RSH1A90YB-U	ATS(DECK1)	
S971	RSH1A89ZB-U	MODE(DECK2)	
S972	RSH1A90YB-U	HALF(DECK2)	
S973	RSH1A90YB-U	R. REC INH. (DECK2)	
S974	RSH1A90YB-U	F. REC INH. (DECK2)	
S975, 976	RSH1A90YB-U	ATS(DECK2)	
		CONNECTOR(S) AND SOCKET(S)	

Ref. No.	Part No.	Part Name & Description	Remarks
CN2P	RJS6T5ZA	CONNECTOR(6P)	
CN2PA	RJS1A6603	CONNECTOR(3P)	
CN2PB	RJS1A6603	CONNECTOR(3P)	
CN3	RJS10T4ZA	CONNECTOR(10P)	
CN4	RJS1A6604	CONNECTOR(4P)	
CN5	RJS7T4ZA	CONNECTOR(7P)	
CN6	RJS1A6604	CONNECTOR(4P)	
CN7-9	RJU003K010M1	SOCKET(10P)	
CN10A	RJS1A6604	CONNECTOR(4P)	
CN10B	RJS1A6603	CONNECTOR(3P)	
CN11, 12	SJS50581BB	SOCKET(5P)	
CP1	RJP3G18ZA	CONNECTOR(3P)	
CP2	RJP5G18ZA	CONNECTOR(5P)	
CP7-9	RJT003K010M1	CONNECTOR(10P)	
CP11, 12	SJT30548BB1	CONNECTOR(5P)	
		JACK(S)	
JK1	SJF3069N	TERMINAL BOARD	
JK701	SJSD16	AC INLET	⚠
JK702	SJS9331B	AC OUTLET	⚠
		GND PART(S)	
E1	SNE1004-2	GND PLATE	
		FLAT CABLE(S)	
W2P	RWJ1806110QQ	FLAT CABLE(6P)	
W3	RWJ1110210QQ	FLAT CABLE(10P)	
W4	RWJ1804160QQ	FLAT CABLE(4P)	
W5	RWJ1107210QQ	FLAT CABLE(7P)	
W6	RWJ1804160QQ	FLAT CABLE(4P)	
W10	RWJ1807300KQ	FLAT CABLE(7P)	
W701	RWJ1804047DD	FLAT CABLE(4P)	[M]

■ RESISTORS AND CAPACITORS

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)
* [M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R1, 2	ERDS2TJ394	1/4W 390K
R3, 4	ERDS2TJ393	1/4W 39K
R5, 6	ERDS2TJ183T	1/4W 18K
R7, 8	ERDS2TJ225	1/4W 2.2M
R9, 10	ERDS2TJ332	1/4W 3.3K
R11, 12	ERDS2TJ102	1/4W 1K
R13, 14	ERDS2TJ332	1/4W 3.3K
R15, 16	ERDS2TJ561	1/4W 560
R19, 20	ERDS2TJ103	1/4W 10K
R21, 22	ERDS2TJ225	1/4W 2.2M
R23, 24	ERDS2TJ104	1/4W 100K
R25-28	ERDS2TJ101	1/4W 100
R29, 30	ERDS2EJ121	1/4W 120
R31, 32	ERDS2TJ273	1/4W 27K
R33, 34	ERDS2TJ183T	1/4W 18K
R35, 36	ERDS2TJ394	1/4W 390K
R37, 38	ERDS2TJ272T	1/4W 2.7K
R39	ERDS2TJ223	1/4W 22K
R40	ERDS2TJ392T	1/4W 3.9K
R41, 42	ERDS2TJ223	1/4W 22K
R43, 44	ERDS2TJ472	1/4W 4.7K
R45, 46	ERDS2TJ562	1/4W 5.6K
R47, 48	ERDS2TJ103	1/4W 10K
R49, 50	ERDS2TJ332	1/4W 3.3K
R51, 52	ERDS2TJ122	1/4W 1.2K
R53, 54	ERDS2TJ330	1/4W 33
R55, 56	ERDS2TJ562	1/4W 5.6K
R57, 58	ERDS2TJ152	1/4W 1.5K
R59, 60	ERDS2TJ272T	1/4W 2.7K
R61, 62	ERDS2TJ103	1/4W 10K
R63, 64	ERDS2TJ104	1/4W 100K
R65, 66	ERDS2TJ473	1/4W 47K
R67, 68	ERDS2TJ124T	1/4W 120K
R69, 70	ERDS2TJ220T	1/4W 22
R71, 72	ERDS2TJ152	1/4W 1.5K
R301	ERDS2TJ1R0	1/4W 1.0
R302, 303	ERDS2TJ183T	1/4W 18K
R304, 305	ERDS2TJ100	1/4W 10
R306	ERDS2TJ471	1/4W 470
R307, 308	ERDS2TJ102	1/4W 1K
R311, 312	ERDS2TJ101	1/4W 100
R313, 314	ERDS2TJ154	1/4W 150K
R315, 316	ERDS2TJ153	1/4W 15K
R317, 318	ERDS2TJ102	1/4W 1K
R319	ERDS2TJ182	1/4W 1.8K
R320	ERDS2TJ272T	1/4W 2.7K
R401-404	ERDS2TJ684	1/4W 680K
R405, 406	ERDS2TJ242	1/4W 2.4K
R407, 408	ERDS2TJ562	1/4W 5.6K
R409, 410	ERDS2TJ243T	1/4W 24K
R411, 412	ERDS2TJ561	1/4W 560
R413, 414	ERDS2TJ682T	1/4W 6.8K
R415, 416	ERDS2TJ562	1/4W 5.6K
R417	ERDS2TJ151	1/4W 150
R418	ERDS2TJ273	1/4W 27K
R603	ERDS2TJ472	1/4W 4.7K ⚠
R604	ERDS2TJ472	1/4W 4.7K
R605	ERDS2TJ103	1/4W 10K
R606	ERDS2TJ472	1/4W 4.7K ⚠
R607, 608	ERDS2TJ102	1/4W 1K
R609	ERD2FCVG150T	1/4W 15 ⚠
R610	ERD2FCVG180T	1/4W 18 ⚠
R611, 612	ERDS2TJ101	1/4W 100
R613	ERD2FCVG330T	1/4W 33 ⚠
R614	ERDS2TJ222	1/4W 2.2K ⚠
R615	ERDS2TJ101	1/4W 100
R616	ERD2FCVG330T	1/4W 33 ⚠
R617	ERDS2TJ222	1/4W 2.2K
R618	ERDS2TJ181T	1/4W 180
R623, 624	ERDS2TJ122	1/4W 1.2K ⚠
R625-632	ERDS2TJ221	1/4W 220
R633, 634	ERD2FCVG330T	1/4W 33 ⚠
R635	ERDS2TJ120T	1/4W 12 ⚠
R636	ERDS2TJ100	1/4W 10 ⚠
R637	ERDS1FVJ220T	1/2W 22 ⚠
R701	ERDS2TJ821	1/4W 820
R702	ERDS2TJ102	1/4W 1K
R703	ERDS2TJ122	1/4W 1.2K
R704	ERDS2TJ152	1/4W 1.5K
R705	ERDS2TJ182	1/4W 1.8K
R706	ERDS2TJ222	1/4W 2.2K
R707	ERDS2TJ332	1/4W 3.3K
R708	ERDS2TJ472	1/4W 4.7K
R709	ERDS2TJ682T	1/4W 6.8K
R710	ERDS2TJ123	1/4W 12K
R711	ERDS2TJ223	1/4W 22K
R712	ERDS2TJ683	1/4W 68K
R713	ERDS2TJ821	1/4W 820
R714	ERDS2TJ102	1/4W 1K
R715	ERDS2TJ122	1/4W 1.2K
R716	ERDS2TJ152	1/4W 1.5K
R717	ERDS2TJ182	1/4W 1.8K
R718	ERDS2TJ222	1/4W 2.2K
R719	ERDS2TJ332	1/4W 3.3K
R720	ERDS2TJ472	1/4W 4.7K
R723	ERDS2TJ153	1/4W 15K
R724, 725	ERDS2TJ102	1/4W 1K
R726, 727	ERDS2TJ562	1/4W 5.6K
R730	ERDS2TJ223	1/4W 22K
R901	ERDS2TJ472	1/4W 4.7K
R902	ERDS2TJ822	1/4W 8.2K
R903	ERDS2TJ472	1/4W 4.7K
R904	ERDS2TJ122	1/4W 1.2K
R905, 906	ERDS2TJ103	1/4W 10K
R907, 908	ERDS2TJ472	1/4W 4.7K
R910	ERDS2TJ222	1/4W 2.2K
R911	ERDS2TJ392T	1/4W 3.9K
R912-914	ERDS2TJ103	1/4W 10K
R915	ERDS2TJ473	1/4W 47K
R916	ERDS2TJ222	1/4W 2.2K
R917	ERDS2TJ122	1/4W 1.2K
R918	ERDS2TJ472	1/4W 4.7K
R919	ERDS2TJ223	1/4W 22K
R920	ERDS2TJ392T	1/4W 3.9K
R921	ERDS2TJ471	1/4W 470
R922, 923	ERDS2TJ103	1/4W 10K
R924	ERDS2TJ102	1/4W 1K
R925	ERDS2TJ105T	1/4W 1M
R926	ERDS2TJ223	1/4W 22K
R927	ERDS2TJ472	1/4W 4.7K
R928-930	ERDS2TJ103	1/4W 10K
R931	ERDS2TJ223	1/4W 22K
R937-941	ERDS2TJ472	1/4W 4.7K
R942	ERDS2TJ822	1/4W 8.2K
R943	ERDS2TJ223	1/4W 22K ⚠
R944	ERDS2TJ821	1/4W 820
R945	ERDS2TJ221	1/4W 220
R946	ERDS2TJ103	1/4W 10K
R947	ERDS2TJ392T	1/4W 3.9K
R948	ERDS2TJ184T	1/4W 180K
R949	ERDS2TJ103	1/4W 10K
R950	ERDS2TJ223	1/4W 22K ⚠
R951	ERDS2TJ821	1/4W 820
R952	ERDS2TJ223	1/4W 22K ⚠
R953	ERDS2TJ821	1/4W 820
R954	ERDS2TJ103	1/4W 10K
R955	ERDS2TJ332	1/4W 3.3K
R956	ERDS2TJ103	1/4W 10K
R957	ERDS2TJ392T	1/4W 3.9K
R958	ERDS2TJ184T	1/4W 180K
R959	ERDS2TJ103	1/4W 10K
R960	ERDS2TJ223	1/4W 22K ⚠
R962	ERDS2TJ223	1/4W 22K
R963	ERDS2TJ562	1/4W 5.6K
R964	ERDS2TJ223	1/4W 22K
R965	ERDS2TJ153	1/4W 15K
R966	ERDS2TJ821	1/4W 820
R967	ERDS2TJ563	1/4W 56K
R968	ERDS2TJ272T	1/4W 2.7K
R969, 970	ERDS2TJ472	1/4W 4.7K
R971	ERDS2TJ152	1/4W 1.5K
R972	ERDS2TJ103	1/4W 10K
		CAPACITORS
C1-4	ECEA1HKA010B	50V 1U
C5, 6	ECEA1CKA220B	16V 22U
C7, 8	ECEA1CKA100B	16V 10U
C9, 10	ECBT1H561KB5	50V 560P
C11, 12	ECBT1H102KB5	50V 1000P
C13, 14	ECEA1AU101	10V 100U
C15, 16	ECQB1H822JF3	50V 8200P
C17-20	ECEA1EKA4R7B	25V 4.7U
C21, 22	ECBT1H471KB5	50V 470P
C23	ECBT1H102KB5	50V 1000P
C24	ECEA1AU101	10V 100U
C25, 26	ECQB1H472JF3	50V 4700P
C27, 28	ECQB1H223JF3	50V 0.022U
C29, 30	ECQB1H103JF3	50V 0.01U
C31, 32	ECQB1H223JF3	50V 0.022U
C33, 34	ECQV1H563JZ3	50V 0.056U
C37, 38	ECBT1H181KB5	50V 180P
C39, 40	ECEA1HKAR47B	50V 0.47U
C41, 42	ECQB1H153JF3	50V 0.015U
C43, 44	ECEA1EKA4R7B	25V 4.7U
C45, 46	ECBT1H561KB5	50V 560P
C47, 48	ECKR2H101KB5	500V 100P
C49, 50	ECQV1H104JZ3	50V 0.1U
C51, 52	ECEA1AU101	10V 100U
C53, 54	ECBT1H391KB5	50V 390P
C55, 56	ECBT1C472KR5	16V 4700P
C57, 58	ECQB1H153JF3	50V 0.015U
C61, 62	ECQB1H153JF3	50V 0.015U
C301	ECQP2A153JZT	100V 0.015U
C302	ECEA1EKA4R7B	25V 4.7U
C303	ECKR1H392KB5	50V 3900P
C304, 305	ECKW1H222KB5	50V 2200P
C306	ECKD1H682KB	50V 6800P
C307	ECKR1H103ZF5	50V 0.01U
C308	ECEA1AU221	10V 220U
C309	ECKR1H103ZF5	50V 0.01U
C310	ECKR1H472KB5	50V 4700P
C311	ECKR1H103ZF5	50V 0.01U
C313, 314	ECKT1H223ZF	50V 0.022U
C315, 316	ECKR2H821KB5	500V 820P
C317, 318	ECBT1H121KB5	50V 120P
C319, 320	ECQV1H473JZ3	50V 0.047U
C321, 322	ECQB1H223JF3	50V 0.022U
C323, 324	ECQB1H103JF3	50V 0.01U
C325, 326	ECKT1H122KB	50V 1200P
C327	ECEA1CKA100B	16V 10U
C328, 329	ECCR1H220JC5	50V 22P
C331	ECKR1H103ZF5	50V 0.01U
C401, 402	ECKT1H122KB	50V 1200P
C403, 404	ECKD1H152KB	50V 1500P
C405-408	ECQB1H222JF3	50V 2200P
C409, 410	ECEA1HUR56B	50V 0.56U
C411, 412	ECEA1HKAR33B	50V 0.33U
C413, 414	ECEA1EKA4R7B	25V 4.7U
C415, 416	ECEA1CKA100B	16V 10U
C601	ECKR2H682PE	500V 6800P ⚠
C603, 604	ECA1EM102B	25V 1000U ⚠
C605	ECA1EU222EV	25V 2200U M⚠
C606	ECKR2H682PE	500V 6800P ⚠
C607, 608	ECA1AM471B	10V 470U
C609, 610	ECKR1H103ZF5	50V 0.01U
C612	ECA1HM470B	50V 47U
C613, 614	ECKR1H103ZF5	50V 0.01U
C615, 616	ECEA1VU220	35V 22U ⚠
C619, 620	ECA1AM102B	10V 1000U
C621, 622	ECEA1CKA470B	16V 47U
C623, 624	ECBT1E103ZF	25V 0.01U
C702	ECBT1E103ZF	25V 0.01U
C901	ECA0JM222B	6.3V 2200U
C902, 903	ECKR1H103ZF5	50V 0.01U
C904	ECEA1EKA4R7B	25V 4.7U
C905	ECEA1HKA010B	50V 1U
C906	ECEA1CKA100B	16V 10U
C911	ECEA1AU101	10V 100U

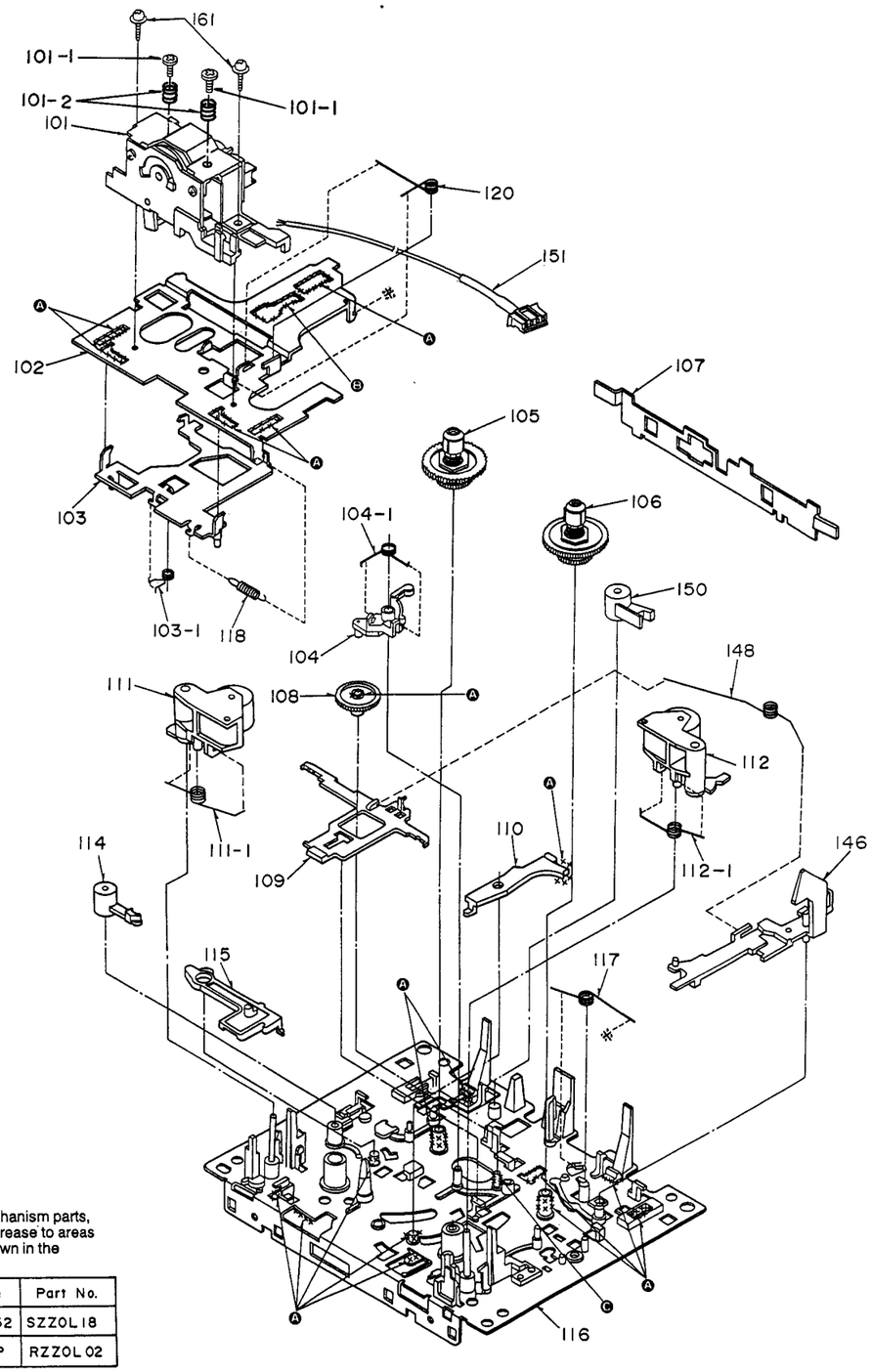
■ EXPLODED VIEWS

1 2 3 4 5 6 7 8 9

A B C D E F

- Mechanical parts
- DECK 1

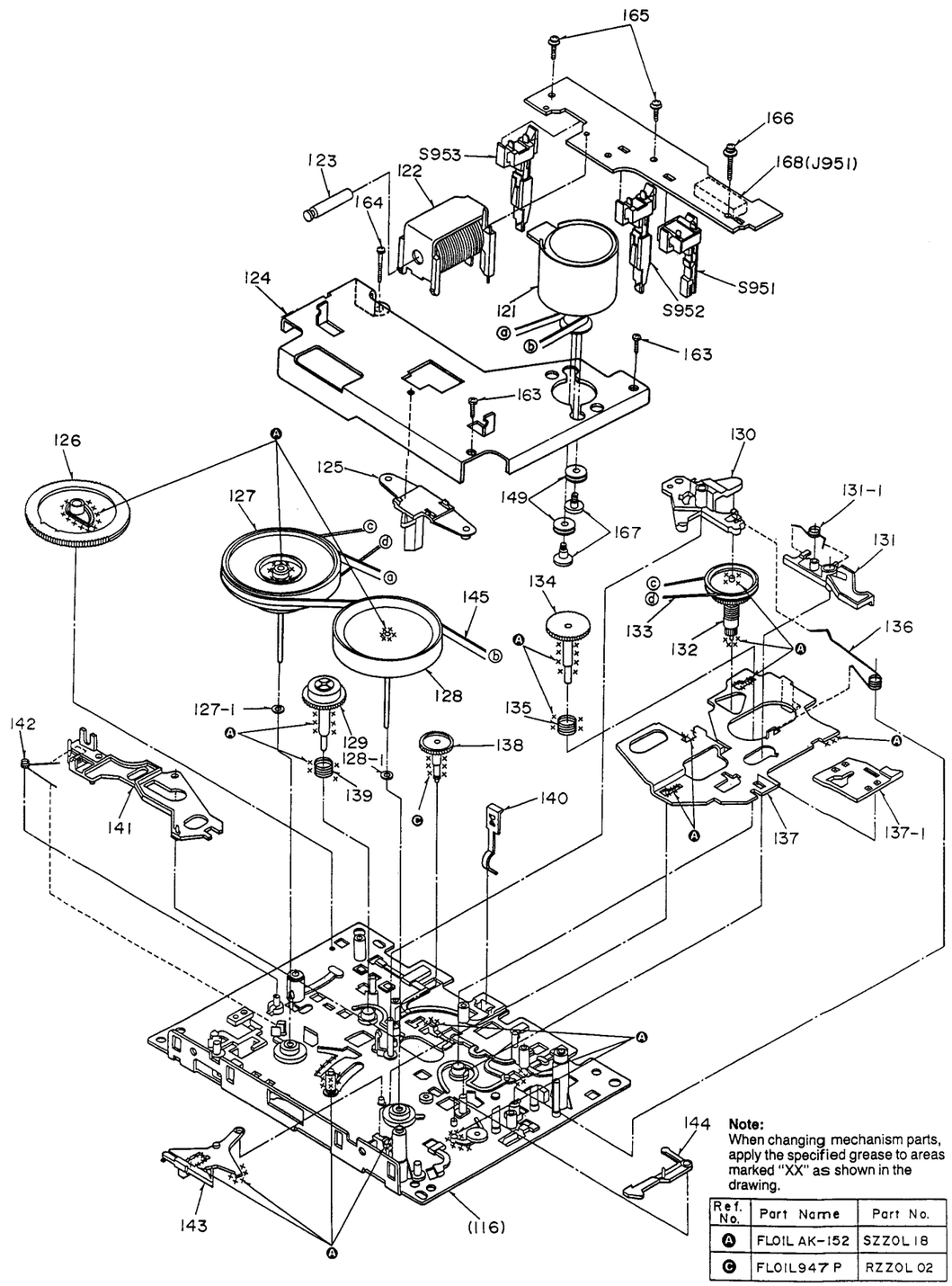
(Top view)



Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL18
C	FLOIL947P	RZZOL02

(Bottom view)



Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL18
C	FLOIL947P	RZZOL02

■ REPLACEMENT PARTS LIST

Note: [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST	
DECK1			
101	RXQ0021	HEAD BLOCK(PLAYBACK)	
101-1	RHE5152ZB	SCREW	
101-2	RMB0331	CPRING	
102	RUA793ZF	CHASSIS	
103	RZLAR300A	LEVER ASS'Y	
103-1	RUW143ZA	SPRING	
104	1UB0089ZA	ARM	
104-1	RUW148ZA	SPRING	
105	1DM0018ZB	REEL TABLE(R)ASS'Y	
106	1DM0017ZB	REEL TABLE(F)ASS'Y	
107	RML0069-1	LEVER	
108	RDG5772ZC	GEAR	
109	RUB508ZB	BRAKE ROD	
110	RUB506ZB	LEVER	
111	1UB0088ZB	PINCH ROLLER(R)ASS'Y	
111-1	RMB0310	SPRING	
112	1UB0087ZB	PINCH ROLLER(F)ASS'Y	
112-1	RUW140ZC	SPRING	
114	RNL1ZD	DAMPER ARM	
115	RUB503ZD	MAIN LEVER	
116	RZUAR300A	CHASSIS ASS'Y	
117	RUW142ZA	SPRING	
118	RUD105ZA	SPRING	
120	RUW139ZA	SPRING	
121	RFM133ZA	DC MOTOR ASS'Y	
122	1UE0015ZB	PLUNGER	
123	RUB428ZE	MOVING IRON CORE	
124	RMA0102-1	PLATE	
125	RMD5014ZC	SPACER	
126	RDG5927ZG	GEAR	
127	1DW0037ZB	FLYWHEEL(F)ASS'Y	
127-1	RNW139ZA	WASHER	
128	1DW0038ZB	FLYWHEEL(R)ASS'Y	
128-1	RNW138ZA	WASHER	
129	1DG0006ZB	REEL TABLE GEAR ASS'Y	
130	RUB513ZD	LEVER	
131	1UB0091ZA	LEVER	
131-1	RUW146ZA	SPRING	
132	1DR0011ZB	PULLEY ASS'Y	
133	RDV90ZB	BELT	
134	RDG5769ZA	REEL TABLE GEAR	
135	RUQ111ZB	SPRING	
136	RUW145ZA	SPRING	
137	1UB0090ZA	ROD	
137-1	RUB512ZB	ROD	
138	RDG5773ZB	GEAR	

Ref. No.	Part No.	Part Name & Description	Remarks
139	RUQ112ZA	SPRING	
140	RUS609ZC	TAPE PRESSURE SPRING	
141	RUB514ZB	LEVER	
142	RUW147ZA	SPRING	
143	RUB515ZA	LEVER	
144	RUB509ZA	LEVER	
145	RDV108ZA	CAPSTAN BELT	
146	RUB507ZD	EJECT ROD(R)	
148	RUW144ZA	SPRING	
149	RMG0102-1	RUBBER CUSHION	
150	RNL180ZB	DAMPER ARM	
151	REXX0088	LEAD WIRE BLOCK(3P)	[M]
161	XTW2+6L	SCREW	
163	XTN26+7J	SCREW	
164	RHE5203ZA	SCREW	
165	XTW2+8S	SCREW	
166	XYC2+JF16	SCREW	
167	RHD26002	SCREW	
168	RJS7T7ZA	CONNECTOR(7P), J951	

Ref. No.	Part No.	Part Name & Description	Remarks
DECK2			
201	RXQ0019	HEAD BLOCK(REC./PLAYBACK)	
201-1	RHE5152ZB	SCREW	
201-2	RMB0331	SPRING	
202	RUA793ZF	CHASSIS	
203	RZLAR300A	ROD	
203-1	RUW143ZA	SPRING	
204	1UB0089ZA	ARM	
204-1	RUW148ZA	SPRING	
205	1DM0018ZB	REEL TABLE(R)ASS'Y	
206	1DM0017ZB	REEL TABLE(F)ASS'Y	
207	RML0069-1	LEVER	
208	RDG5772ZC	GEAR	
209	RUB508ZB	BRAKE ROD	
210	RUB506ZB	LEVER	
211	1UB0088ZB	PINCH ROLLER(R)ASS'Y	
211-1	RMB0310	SPRING	
212	1UB0087ZB	PINCH ROLLER(F)ASS'Y	
212-1	RUW140ZC	SPRING	
213	RUB541ZB	EJECT ROD(L)	
214	RNL1ZD	DAMPER ARM	
215	RUB503ZD	MAIN LEVER	
216	RZUAR300A	CHASSIS ASS'Y	
217	RUW142ZA	SPRING	
218	RUD105ZA	SPRING	
219	RUW167ZA	SPRING	
220	RUW139ZA	SPRING	
221	RFM133ZA	DC MOTOR ASS'Y	
222	1UE0015ZB	PLUNGER	
223	RUB428ZE	MOVING IRON CORE	
224	RMA0102-1	PLATE	
225	RMD5014ZC	SPACER	
226	RDG5927ZG	GEAR	
227	1DW0037ZB	FLYWHEEL(F)ASS'Y	
227-1	RNW139ZA	WASHER	
228	1DW0038ZB	FLYWHEEL(R)ASS'Y	
228-1	RNW138ZA	WASHER	
229	1DG0006ZB	REEL TABLE GEAR ASS'Y	
230	RUB513ZD	LEVER	
231	1UB0091ZA	LVER	
231-1	RUW146ZA	SPRING	
232	1DR0011ZB	MAIN PULLEY ASS'Y	
233	RDV90ZB	BELT	
234	RDG5769ZA	REEL TABLE GEAR	
235	RUQ111ZB	SPRING	
236	RUW145ZA	SPRING	
237	1UB0090ZA	ROD	
237-1	RUB512ZB	ROD	
238	RDG5773ZB	GEAR	
239	RUQ112ZA	SPRING	
240	RUS609ZC	TAPE PRESSURE SPRING	

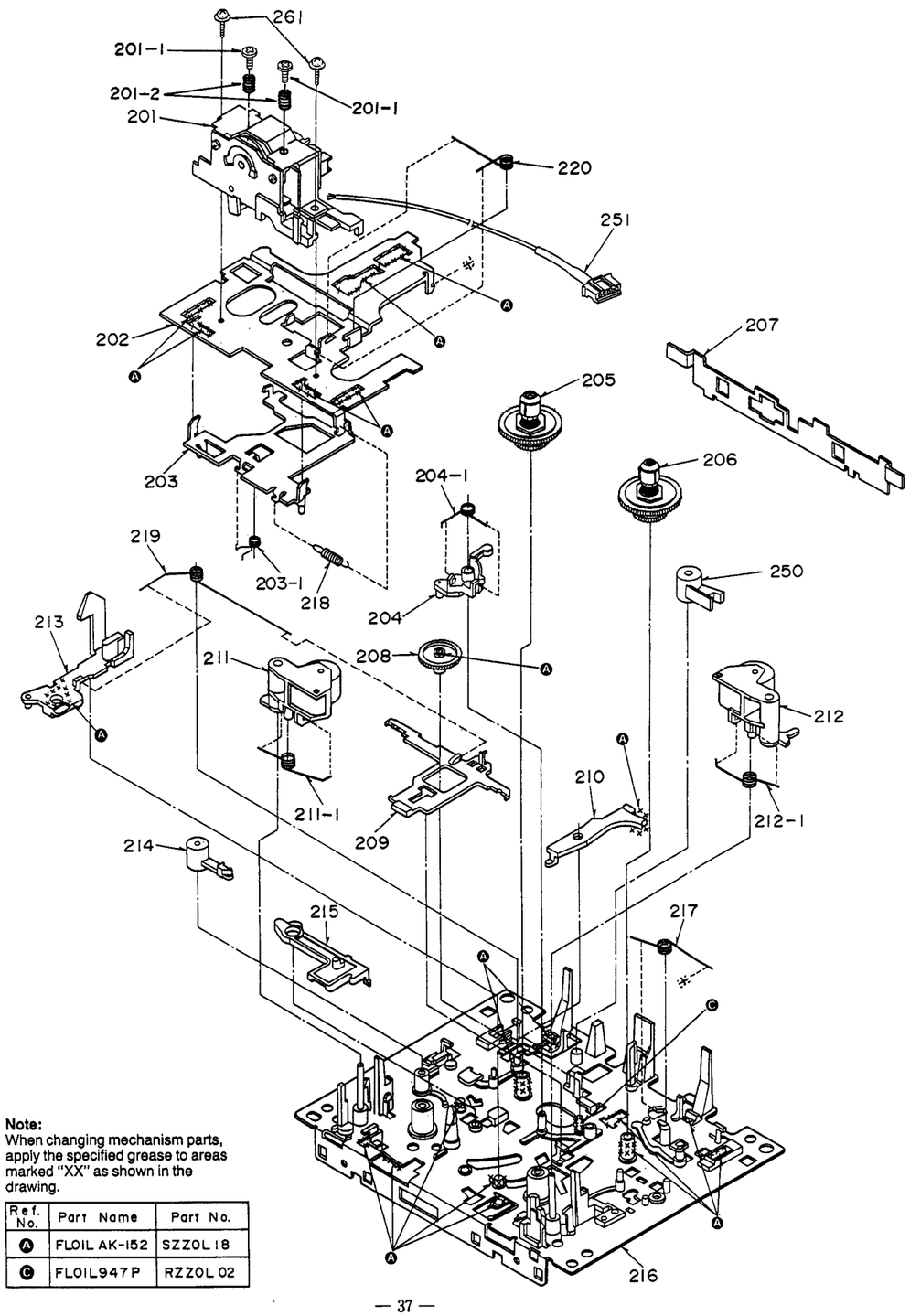
Ref. No.	Part No.	Part Name & Description	Remarks
241	RUB514ZB	LEVER	
242	RUW147ZA	SPRING	
243	RUB515ZA	LEVER	
244	RUB509ZA	LEVER	
245	RDV108ZA	CAPSTAN BELT	
249	RMG0102-1	RUBBER CUSHION	
250	RNL180ZB	DAMPER ARM	
251	REX0305-1	LEAD WIRE BLOCK(4P)	[M]
261	XTW2+6L	SCREW	
263	XTN26+7J	SCREW	
264	RHE5203ZA	SCREW	
265	XTW2+8S	SCREW	
266	XYC2+JF16	SCREW	
267	RHD26002	SCREW	
268	RJS10T7ZA	CONNECTOR(10P), J971	

■EXPLODED VIEWS

• Mechanical parts

• DECK 2

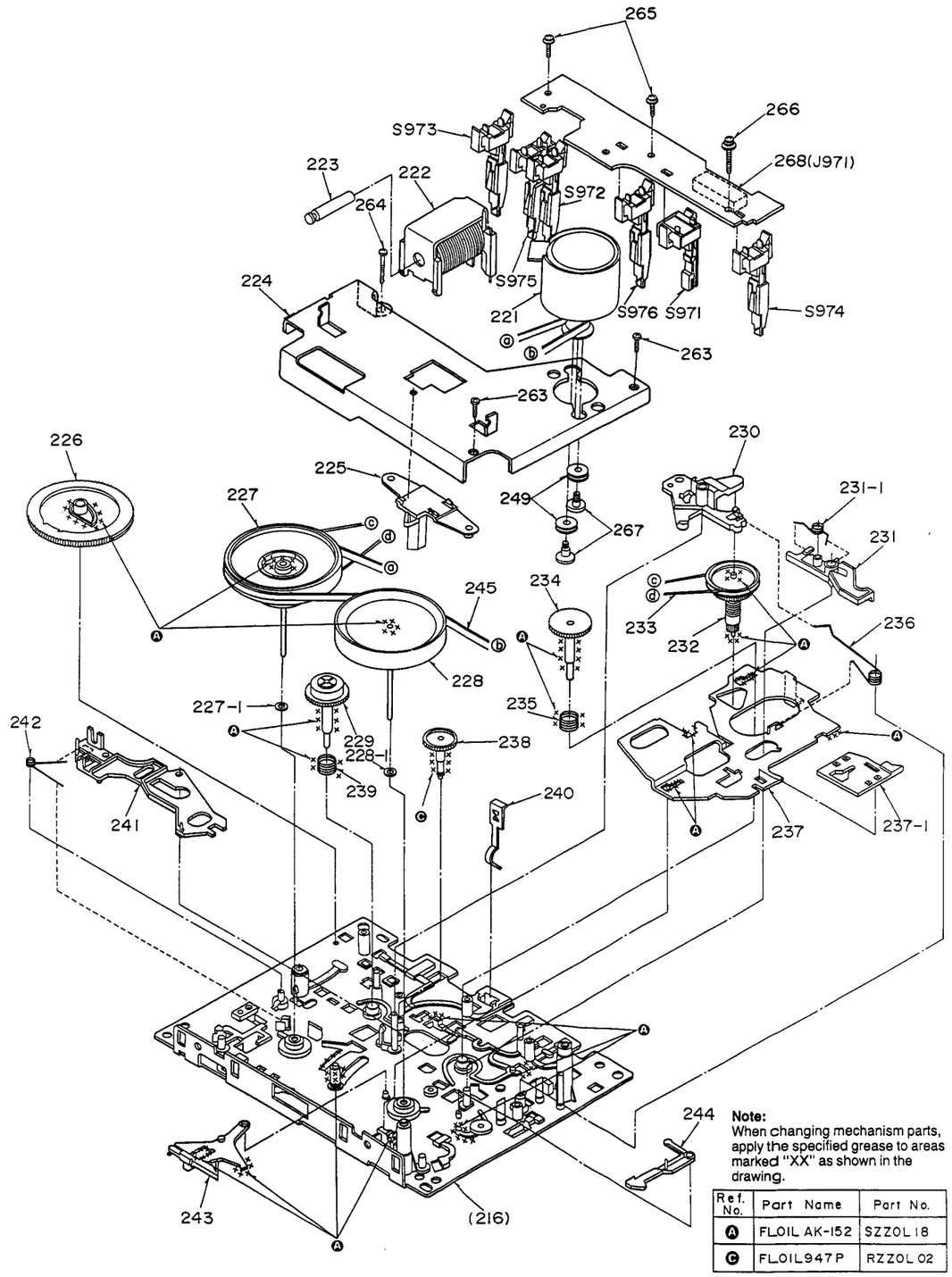
(Top view)



Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
Ⓐ	FLOIL AK-152	SZZOL18
Ⓒ	FLOIL947P	RZZOL02

(Bottom view)

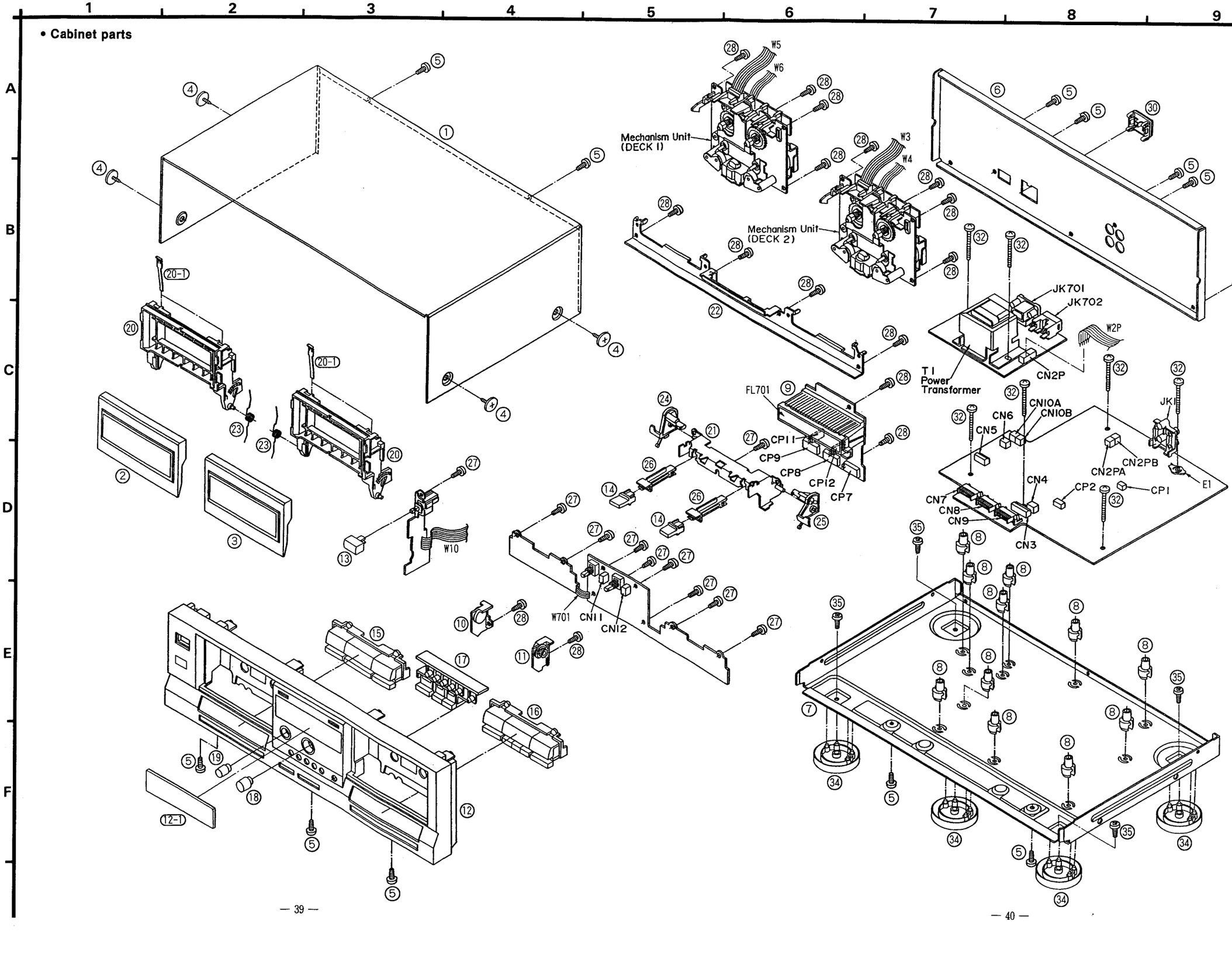


Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
Ⓐ	FLOIL AK-152	SZZOL18
Ⓒ	FLOIL947P	RZZOL02

■EXPLODED VIEWS

• Cabinet parts



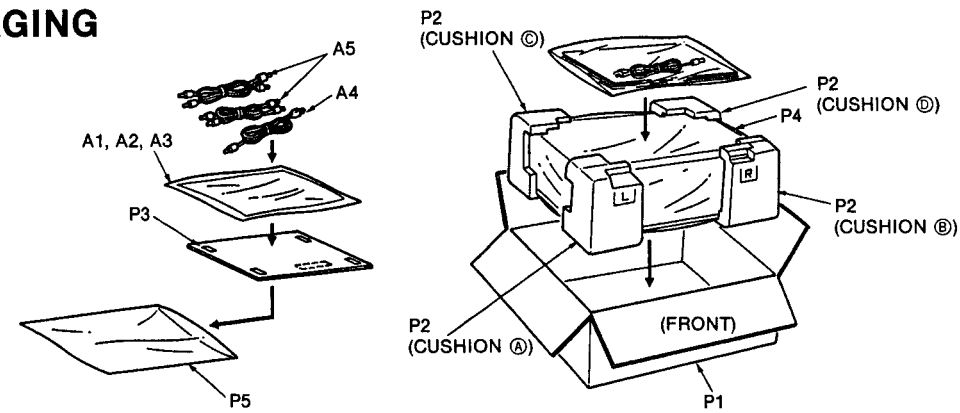
■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*[M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKMD260-1K	CABINET	
2	RFKLSTR262PK	CASSETTE LID ASS'Y(DECK1)	[M]
3	RFKLSTR252PB	CASSETTE LID ASS'Y(DECK2)	[M]
4	SNE2129-1	SCREW	
5	XTBS3+8JFZ1	SCREW	
6	RGRD112K-B1	REAR PANEL	[M]
7	RMKD026-7	BOTTOM CHASSIS	
8	RKQQ089	P.C.B. HOLDER	
9	RMNQ112	FL HOLDER	
10	RFKNSDN7AK	DAMPER GEAR ASS'Y(L)	
11	RFKNSDN7BK	DAMPER GEAR ASS'Y(R)	
12	RFKGSTR262PK	FRONT PANEL ASS'Y	[M]
12-1	RKWQ139A-K1	TRANSPARENT PLATE	
13	RGUQ030	BUTTON, POWER	
14	RGUQ070	BUTTON, EJECT	
15	RGUQ520A-K	BUTTON, OPERATION(DECK1)	
16	RGUQ519A-K	BUTTON, OPERATION(DECK2)	
17	RFKNSTR232P	BUTTON ASS'Y, SYNCHRO	
18	RGWQ109-K	KNOB, REC LEVEL	
19	RGWQ110-K	KNOB, BALANCE	
20	RKFQ169A-K	CASSETTE HOLDER	
20-1	QBP2006A	TAPE PRESSURE SPRING	
21	RMAQ406	EJECT ANGLE	
22	RMAQ407	MECHANISM ANGLE	
23	RMEQ068-1	SPRING	
24	RMLQ185-1	EJECT LEVER(L)	
25	RMLQ186-1	EJECT LEVER(R)	
26	RMMQ014	EJECT ROD	
27	XTBS26+8J	SCREW	
28	XTB3+10JFZ	SCREW	
30	SJS9331A	AC OUTLET COVER	

Ref. No.	Part No.	Part Name & Description	Remarks
32	XTB3+20JFZ	SCREW	
34	RFKNSTR252PK	FOOT ASS'Y	[M]
35	XTB3+6J	SCREW	
		PACKING MATERIAL	
P1	RPG2306	CARTON BOX	[M]
P2	RPNQ296	CUSHION	
P3	RPQQ164	ACCESSORIES PAD	
P4	RPFQ100	PROTECTION COVER(THIS UNIT)	[M]
P5	XZB24X34C04	PROTECTION BAG(F.B., ACC.)	
		ACCESSORIES	
A1	RQT2705-P	INSTRUCTION MANUAL	[M]
A2	RQAQ085	WARRANTY CARD	
A3	RQCB0391	SERVICENTER LIST	
A4	SJA172	AC POWER SUPPLY CORD	⚠
A5	SJP2249-3	STEREO CONNECTION CABLE	
		<GREASE OR JIG/TOOL>	
		TEST TAPE	
SA1	QZZCFM	OVERALL ADJUSTMENT CHECK	
SA2	QZZCWAT	TAPE SPEED ADJUSTMENT	
SA3	QZZCRV2	BLANK TAPE(Normal Position)	
SA4	QZZCRX1	BLANK TAPE(CrO2 Position)	
SA5	QZZCRZ5	BLANK TAPE(Metal Position)	
		GREASE	
SA6	SZZ0L18	FLOIL AK-152	
SA7	RZZ0L02	FLOIL947P	

■ PACKAGING



<CUSHION Ⓐ, Ⓑ, Ⓒ, Ⓓ, Part No.: RPN0296>

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